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MARCH, 1960



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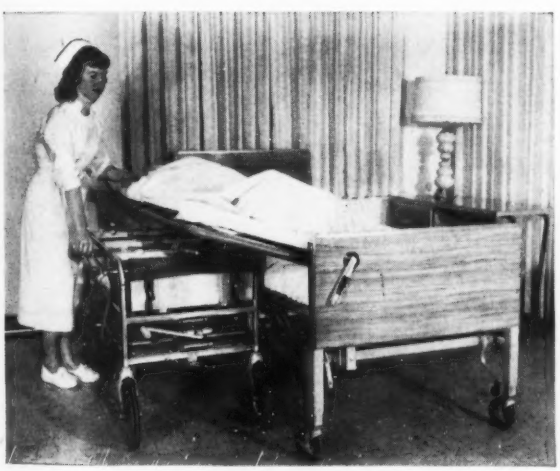

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# staph newsletter

**FIFTH OF A SERIES WITH SIGNIFICANT SUGGESTIONS FOR CONTROLLING CROSS INFECTION**

WHILE this letter is being written, reports are increasing on the occurrence of flu and flu-like illnesses leading rapidly to staphylococcal pneumonia and ending in death. By the time you are reading this, influenza may have become truly epidemic or it may have started a seasonal downtrend. But with its already wide national spread mentioned in USPHS-HEW Morbidity and Mortality Reports as breaking out from Hawaii to British Honduras—we all realize no precautions can be too stringent. Since it is known that influenza virus persists for days in a virulent form in the environment, intensive disinfection is an essential preventive measure.

*"Infections have occurred that nothing known to medical science at present time will cure. There is also evidence accumulated to show the same trend in some other bacteria, especially some of the gram-negative bacilli found in the urinary tract. Our problem, though simple, is a big one and we have just begun to fight back. These staphylococcal infections manifest themselves by wound infections, furunculosis, pneumonia and enteritis. The first two are our concern because they are sources of spread of the organisms and the last two are vicious in their assault on human life. The pneumonia and enteritis may kill quickly and surely in one to three days."* Arnold W. Lempka, M.D.: Nebraska State Medical Journal, October, 1959.

In the matter of aseptic housekeeping of the operating room, Dr. Lempka recommends that "no dusting should be allowed. A wet scrub or washdown is in order."

Tergisyl®, Lehn and Fink's combined phenolic disinfectant and detergent, is being used widely and effectively for flooding floors and washing down all equipment and surfaces in the operating room. Dr. Ralph Adams, Chief of Surgery at Huggins Hospital, Wolfeboro, N. H., has reported disinfection with Tergisyl as an integral part of his established system for controlling infection in the O.R. The infection rate was reduced from 2% to .25%. If you would like reprints of Dr. Adams' article from the American Journal of Nursing (August, 1959), please let us know.

The importance of "The Committee on Infections" has occasionally been discussed by us on this page, or in other L&F communications to our hospital friends. Generally, we have assumed that you had a committee continually evaluating the staph problem and we have offered any assistance or information you might find useful from our long experience in developing efficient disinfectants for hospital use. In his Hospital Management article on infections committees, Dr. Charles U. Letourneau has some interesting suggestions. As those of us who know Dr. Letourneau would expect, the article pulls no punches and calls a spade a spade but, as we would also expect, the recommendations are well founded and documented. You'll find it on page 37 of the February, 1960, issue.

*Successful reduction of staphylococcal infection in a 28-bed male surgical ward at the British Royal Infirmary is reported in The Lancet for November 7, 1959, page 781. Infection rate had been 40% on open wounds, with 3.3% considered significant because of such complications as pneumonia, urinary tract infection, parotitis, enterocolitis, furunculosis, and wound sepsis originating at operation. Introduction of a combination of preventive measures, closely studied for two years, resulted in appreciable reduction in staph infection, not only in the ward but in O.R. infections in patients from the ward. Among precautions followed were: disinfection of blankets and pillows, disinfection of dishes and cutlery, use of germicidal hand cream by nurses, disinfection of the ward barber's shaving brushes and razors, disinfection of bathtubs.*

Increased use of the term "contamination control program" by hospitals who have begun by concentrating on staph infection control, brings us again to some other organisms which need control. For instance, the Journal of the American Medical Association (January 23, 1960, page 329) has a detailed report on a case of postoperative endocarditis due to Pseudomonas aeruginosa. In this case, recovery followed reoperation and long convalescence but the source of infection was never determined. Other articles are mentioned reporting similar infections following heart surgery, most of which ended fatally. Bacteremia following cardiac catheterization was reported in the June 4, 1959, issue of the New England Journal of Medicine. Studies of the source revealed that disinfection had been attempted with substances inadequate to kill the virulent, resistant Pseudomonas aeruginosa inside the catheters.

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Charles F. Manz
General Sales Manager
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HOSPITAL Topics

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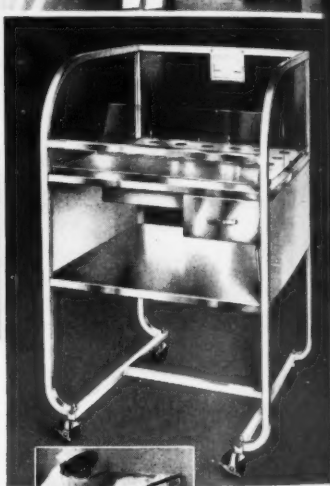

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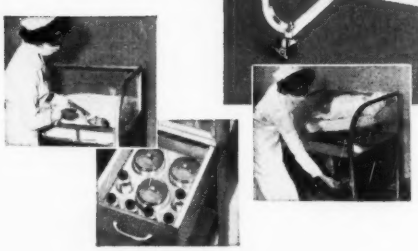

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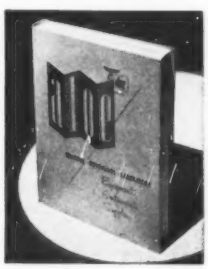

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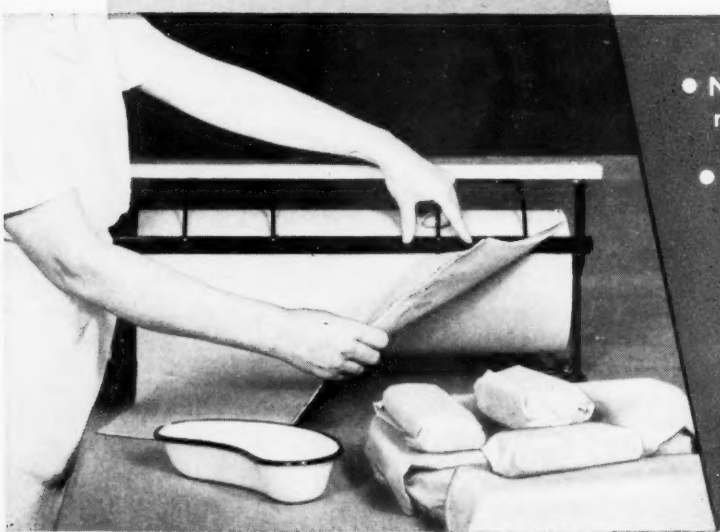

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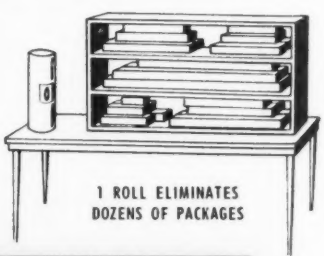

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## THIS MONTH IN

HOSPITAL Topics—

- Manchester (Conn.) Memorial Hospital, pioneer in the field of progressive patient care, provided TOPICS' feature editor with the information for the first in a series on this subject. Besides telling the staffs' views on PPC now that it's been in operation almost three years, she also includes opinions from patients who were in the hospital before and after PPC began. (Page 19)

- Planning for the Women and Children's Hospital, Baylor University Medical Center, Dallas, Tex., was a cooperative effort, involving doctors, nurses, and former patients. The approach to planning and some of the unusual hospital features which resulted are described as "Hospital Topics Goes Calling" on the institution. (Page 32) Its administrator, **Boone Powell,** is TOPICS' personality of the month. (Page 45)

- The third and final installment in a Public Health Service series on "Planning an Administrative Department for 50-, 100-, and 200-Bed Hospitals" presents checklists for evaluating planning and suggested lists of equipment. This series will soon be available in reprint form. (Page 40)

- In a study of the O.R. department at the Jewish Hospital of St. Louis, industrial engineer **Maurice Wolfe** came up with some controversial recommendations aimed at improving performance of O.R. personnel and developing a better system of cost controls. One suggestion was the appointment of an administrative coordinator. **Alice R. Clarke** has written an analytical review of Mr. Wolfe's study. (Page 85)

- Diseases caused by parasites are being seen more frequently in the United States, with the influx of Puerto Ricans. In an interview with TOPICS' feature editor, **William J. Henry, Jr.,** and **Carol Hamer** of the New England Center Hospital, Boston, tell how to set up a parasitology laboratory, and suggest that even the smallest community hospital can be on the alert for an outbreak of parasitic diseases. (Page 107)

- Billings Hospital, University of Chicago, was the scene of the striking operating-room photograph taken by artist-photographer **Jon R. Pownall** for TOPICS' cover.

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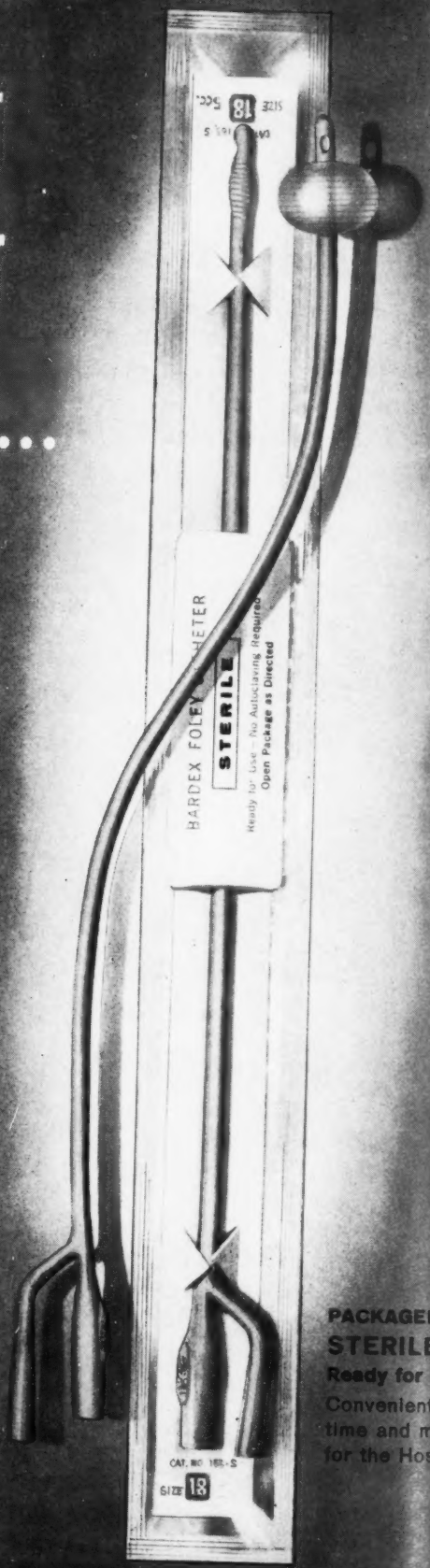


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The News Magazine for the Hospital Staff

MARCH, 1960
VOL. 38, NO. 3

# Scanning the News

## Quick Chest Blows May Start Arrested Heart

A sharp, fast blow on the patient's chest may start a heart that has stopped due to cardiac arrest, states John T. Brandenburg, M.D., Medford, Oregon.

Dr. Brandenburg reports that three successive chest blows revived a patient who had been brought into the hospital after a heart attack. Though conscious when he entered the hospital, the patient suddenly "passed out," and pulse and heart tones stopped abruptly.

Death due to cardiac arrest was diagnosed and immediate thoracotomy was considered. But the patient responded to Dr. Brandenburg's blows, and regained consciousness almost immediately. The total time of cardiac arrest was less than one minute, and the patient recovered without further mishap.

## Burn Ointments Have Little Value

Many of the ointments used in burn treatment have little or no practical value in the promotion of healing, states Isidor S. Ravdin, M.D., Philadelphia. He continues by adding that some of the so-called healing agents used are actually detrimental to epithelization.

The open method of treatment, where no dressing is used and the skin itself serves as a bandage, is steadily gaining acceptance, says Dr. Ravdin.

The general use of antibiotics to prevent widespread systemic infection is valuable, he adds, since one of the most frequent causes of death in serious burns is from late-developing general infection.

**Mrs. Lucile Petry Leone (seated), president, National League for Nursing, New York, and chief nurse officer, Public Health Service, Washington, D. C., signs the first national Future Nurses Club charter for presentation to the Future Nurses Club of Franklin High School, Reistertown, Md. Looking on are members of the club, first high school club exploring careers in nursing and health to be chartered nationally. Future Nurses Clubs, over 3,000 in number, are sponsored by the committee on careers, National League for Nursing. Standing (l. to r.) are Mrs. Elizabeth M. Kinsey, school nurse adviser to the club; Kathleen Mehring, club president; Jacqueline Gibney, vice-president; and Joyce France, club member.**

## Alcoholics May Respond To Hypnotism

Hypnotism may be useful in the treatment of chronic alcoholism, according to a study made on 24 patients by Michael M. Miller, M.D., Washington, D. C.

Under hypnosis, an aversion to alcohol is created, so that even a slight taste or smell of alcoholic beverages will evoke an adverse reaction, states Dr. Miller.

Duration of alcoholism in Dr. Miller's patients ranged from three to 34 years. He adds that the hypnotism therapy is not a cure-all for alcoholism, but is a procedure to control drinking so that constructive psychotherapeutic steps can be taken to combat underlying causes of the condition.

## Patients 'Turn Green' As Part of Treatment

Physicians at a hospital near Melbourne, Australia, have been turning patients green in a new method of preparing severe burns and bone infections for treatment.

Dye is injected into the blood stream and healthy tissue absorbs the color so that the patient becomes a deep green all over. Tissue

(*Continued on page* 83)

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# News Briefs at Press Time

**SENATOR KENNEDY FILES VERSION OF FORAND BILL**

S 2915, a bill which is substantially the same as the Forand bill except that it omits surgical benefits, has been filed by Sen. John Kennedy (D., Mass.). Because benefits are limited to hospital and nursing-home services, Kennedy hopes that organized medicine will offer minimal opposition and yet that bill will appeal to aged.

Meanwhile, Secretary Flemming has re-emphasized his opposition to Forand bill, although President Eisenhower has admitted his aides are examining feasibility of increasing payroll tax one-fourth of one percent to provide health benefits for aged — same increase called for in Forand bill.

The HEW secretary said that although the payroll-social security plan is being studied, administration is also investigating two other possible methods of giving medical benefits to aged with public funds: (1) federal grants to states and (2) financial aid to nongovernmental health insurance programs.

**SENATE SUBCOMMITTEE ON AGED ASKS MEDICAL BENEFITS UNDER SOCIAL SECURITY**

Senate Subcommittee on Problems of the Aged and Aging, in its report issued early in February, asked Congress to amend social security to give medical services to social security recipients. Committee's two Republican members — Senators Dirksen (Ill.) and Goldwater (Ariz.) — did not sign report.

Majority report does not endorse by name the Forand, Kennedy or other pending bills, but makes it obvious that subcommittee's Democratic members (including Senator Kennedy) support the principle of increasing social security payments to pay for health benefits for aging.

Subcommittee, headed by Sen. Pat McNamara (D., Mich.), asks for creation of a "U.S. Office of the Aging," to keep older people from being "buffeted from agency to agency, from committee to council."

Other recommendations: federal legislation to promote construction of housing (to include "essential health and social services") for elderly people with limited incomes; development by Department of HEW of minimum standards for maintaining and operating nursing homes, followed by financial aid program to homes complying with these standards and those of their respective states; federal project grants for health screening, home care, and other services.

**HOSPITAL BUREAU HOLDS 50th ANNIVERSARY MEETING**

The Hospital Bureau, Inc., is holding its 50th anniversary meeting March 3 at the Sheraton-East Hotel, New York City.

Principal speaker will be Francis R. Smith, Pennsylvania's insurance commissioner.

Warren W. Irwin, director of purchases, Rochester (N Y.) Regional Hospital Council, is head of the board of directors.

**FLU, PNEUMONIA DEATHS INCREASE 44% OVER SAME PERIOD IN 1959**

Total of 4,033 deaths from influenza and pneumonia were reported to PHS by 108 big cities in first five weeks of 1960. This figure represents a 44 percent increase over same period last year, and a 20 percent rise over that period in 1958.

Apparently respiratory infections this year are attacking adults more frequently than children, according to PHS Surgeon General Burney, who says reports from some areas indicate that absenteeism is higher in industrial populations than in school populations, and that other reports show that majority of pneumonia and influenza deaths are occurring in over-65 age group.

**BRIEF BRIEFS**

The three armed services are cooperating in presenting a symposium on forensic at the Armed Forces Institute of Pathology, Washington, D.C. Three-day program will begin May 3.

— Robert J. Benford, M.D., who has retired from the Air Force, has been named to new position of director of medical relations. Washington headquarters staff, Pharmaceutical Manufacturers Association.

— Bill introduced by Rep. John E. Fogarty (D., R.I.) would authorize $10 million annually to help finance undergraduate medical, osteopathic, and dental education — subject to state matching of funds for scholarship aid.

— National Institutes of Health in January awarded research funds totaling $16,957,846, to finance 883 project grants and 407 fellowships. Of the total $10.6 million was in continued support for previously approved projects and fellowships.

— Compulsory social security coverage for physicians has been proposed again, this time in omnibus social security bill (S 2994) filed by Sen. Stephen M. Young (D., Ohio).

— "National Health Plan" has been published by Office of Civil and Defense Mobilization. The 19-page guide (Annex No. 18) is one of OCDM series of outlines of responsibility for civil defense and defense mobilization. Copies of Annex No. 18 can be obtained upon request from Office of OCDM director, Leo A. Hoegh.

Gordon M. Marshall

# Calendar of Meetings

MARCH

7-10 AHA Institute, Nursing Service Supervision, Bellerive Hotel, Kansas City, Mo.

10 Wisconsin Hospital Association, Schroeder Hotel, Milwaukee

13-18 National Health Council, National Health Forum, Miami, Fla.

15-17 American Laryngological, Rhinological and Otological Society, Deauville Hotel, Miami Beach, Fla.

17-19 American Radium Society, Caribe-Hilton Hotel, San Juan, Puerto Rico

20-23 Pan American Association of Oto-Rhino-Laryngology and Broncho-Esophagology, Miami Beach, Fla.

21-23 American College of Surgeons, Sectional Meeting, The Broadmoor, Colorado Springs, Colo.

21-24 American Academy of General Practice, Convention Hall, Philadelphia

21-24 Southeastern Surgical Congress, Roosevelt Hotel, New Orleans

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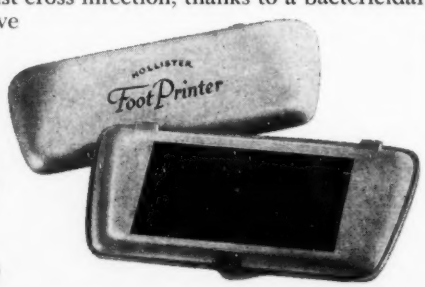


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21-25 AHA Institute, Dietary-Housekeeping Nursing Departments Relationships, AHA Headquarters, Chicago

22-24 Kentucky Hospital Association, Kentucky Hotel, Louisville

24-26 Louisiana Hospital Association, Bellemont Motor Hotel, Baton Rouge

26-27 American Psychosomatic Society, Sheraton-Mount Royal Hotel, Montreal, Que., Canada

28-30 American College of Surgeons, Sectional Meeting, Sheraton-Portland Hotel, Portland, Ore.

28-30 New England Hospital Assembly, Hotel Statler, Boston

28-31 Southwestern Surgical Congress, Riviera Hotel, Las Vegas

29-31 Kentucky Hospital Association, Kentucky Hotel, Louisville

31-April 1 Georgia Hospital Association, Wanderer Motel, Jekyll Island

31-April 2 National Society for Prevention of Blindness, Brown Palace Hotel, Denver, Colo.

APRIL

2- 6 American College of Obstetricians and Gynecologists, Netherland Hilton Hotel, Cincinnati

3- 6 American Surgical Association, The Greenbrier, White Sulphur Springs, W. Va.

3- 7 Annual Conference of Blue Cross Plans, Statler Hotel, Los Angeles

3- 7 International Anesthesia Research Society, Shoreham Hotel, Washington, D.C.

4- 6 AHA Institute, Hospital Organization, AHA Headquarters, Chicago

4- 7 Ohio Hospital Association, Veterans Memorial Building, Columbus

4- 8 AHA Institute, Nursing Service Administration, Hotel Blackstone, Omaha, Neb.

4- 8 American College of Physicians, Mark Hopkins & Fairmont Hotels, San Francisco

7- 9 American Association of Railway Surgeons, Drake Hotel, Chicago

8-12 American Dermatological Association, Inc., Boca Raton Hotel, Boca Raton, Fla.

11-13 American College of Surgeons, Sectional Meeting, Hotel Leamington, Minneapolis

11-14 AHA Institute, Hospital Engineering, Radisson Hotel, Minneapolis

11-15 American Physiological Society, Chicago

11-15 Federation of American Societies for Experimental Biology, Hilton Hotel, Chicago

11-16 International Anatomical Congress, New York City

14 American College of Surgeons, Sectional Meeting, Kahler Hotel, Rochester, Minn.

(*Continued on page* 14)

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CALENDAR OF MEETINGS

(*Continued from page 12*)

APRIL

18-19 Society of Neurological Surgeons, Olympic Hotel, Seattle

21-22 Carolinas-Virginias Hospital Conference, Roanoke Hotel, Roanoke, Va.

25-27 International Academy of Pathology, Memphis, Tenn.

25-27 Association of Western Hospitals, Statler-Hilton Hotel, Los Angeles

26-29 Industrial Medical Association, War Memorial Auditorium, Rochester, N. Y.

27 New Jersey Hospital Association, Convention Hall, Atlantic City, N.J.

27 Hospital Association of New York State, Convention Hall, Atlantic City, N.J.

27 Hospital Association of Pennsylvania, Convention Hall, Atlantic City, N.J.

27-29 Middle Atlantic Hospital Assembly, Convention Hall, Atlantic City, N.J.

27-29 Mid-West Hospital Association, Municipal Auditorium, Kansas City, Mo.

28-29 Iowa Hospital Association, Roosevelt Hotel, Cedar Rapids

28-30 American Association of Pathologists and Bacteriologists, Hotel Peabody, Memphis, Tenn.

MAY

1- 2 American Society for Clinical Investigation, Haddon Hall, Atlantic City, N.J.

1- 5 Society of American Bacteriologists, Bellevue-Stratford Hotel, Philadelphia

2- 4 Tri-State Hospital Assembly, Palmer House, Chicago

2- 6 American Nurses' Association, Miami Beach Hall, Miami Beach

2-11 Pan American Medical Association Congress, National Auditorium, Mexico City

3- 5 Society of Pediatric Research, New Ocean House, Swampscott, Mass.

3- 6 AHA Institute, Occupational Therapists, AHA Headquarters, Chicago

4- 6 New Mexico Hospital Association, Western Skies Hotel, Albuquerque

4- 6 Southeastern Hospital Conference, Deauville Hotel, Miami Beach, Fla.

5- 6 American Pediatric Society, New Ocean House, Swampscott, Mass.

5- 8 Student American Medical Association, Statler-Hilton Hotel, Los Angeles.

9-11 Aerospace Medical Association, Americana Hotel, Bal Harbour, Fla.

9-13 American Psychiatric Association, Convention Hall, Atlantic City, N.J.

10-12 Texas Hospital Association, Memorial Auditorium, Dallas

11-13 Upper Midwest Hospital Conference, Minneapolis Auditorium, Minneapolis

11-13 American Association for Thoracic Surgery, Deauville Hotel, Miami Beach, Fla.

12 Massachusetts Hospital Association, Hotel Statler-Hilton, Boston

15-18 International College of Surgeons, International Congress, Roman Palace of Receptions and Congresses, Rome, Italy

15-20 National Tuberculosis Association, Statler & Biltmore Hotels, Los Angeles

16-18 AHA Institute, Hospital Law, Willard Hotel, Washington, D.C.

16-18 American National Red Cross, Kansas City

16-18 American Ophthalmological Society, The Broadmoor, Colorado Springs, Colo.

16-19 American Urological Association, The Palmer House, Chicago

16-20 Medical Library Association, Inc., Muehlebach Hotel, Kansas City, Mo.

(*Continued on page 16*)


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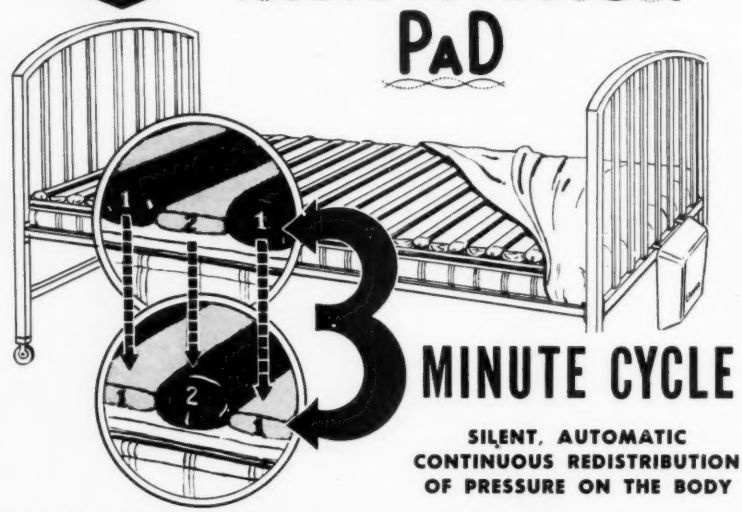


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## CALENDAR OF MEETINGS

(*Continued from page 14*)

16-21 American Association on Mental Deficiency, Lord Baltimore Hotel, Baltimore, Md.

18-22 Second German Hospital Congress, Stuttgart, West Germany

23-26 AHA Institute, Evening and Night Nursing Service Administration, New Washington Hotel, Seattle

26-27 Tennessee Hospital Association, Peabody Hotel, Memphis, Tenn.

30-June 1 American Gynecological Society, Williamsburg Inn, Williamsburg, Va.

30-June 2 American Orthopaedic Association, The Homestead, Hot Springs, Va.

30-June 2 Catholic Hospital Association, Municipal Auditorium, Milwaukee, Wis.

JUNE

7- 8 Maine Hospital Association, Samoset Hotel, Rockland

8-12 American College of Chest Physicians, Miami Beach, Fla..

9-10 American Geriatrics Society, Americana Hotel, Miami Beach, Fla.

11-12 American Diabetes Association, Deauville Hotel, Miami Beach, Fla.

11-16 American Society of X-Ray Technicians, Netherland Hilton Hotel, Cincinnati

13-15 AHA Institute, Advanced Personnel Administration, AHA Headquarters, Chicago

13-17 Canadian Medical Association, Banff, Alberta, Canada

13-17 International Congress of Clinical Pathology, Madrid, Spain

13-17 American Medical Association, 1960 Annual Meeting, Auditorium, Miami Beach, Fla.

19-21 Michigan Hospital Association, Park Palace Hotel, Traverse City

19-24 American Society of Medical Technologists, Hotel Ambassador, Atlantic City

20-22 Mississippi Hospital Association, Hotel Buena Vista, Biloxi

21-23 International Academy of Pathology, London, England

24-26 Comte des Hospitaux du Quebec, Provincial Exhibition Grounds, Quebec City, Que., Canada

26-July 2 American Physical Therapy Association, Penn-Sheraton Hotel, Pittsburgh

JULY

11-13 AHA Institute, Methods Improvement, Hotel Sheraton Fontenelle, Omaha

AUGUST

7-12 Gerontological Society, Mark Hopkins Hotel, San Francisco

8-11 National Medical Association, Penn-Sheraton Hotel, Pittsburgh

21-26 American Association of Blood Banks, Jack Tar Hotel, San Francisco

21-26 American Congress of Physical Medicine and Rehabilitation, Mayflower Hotel, Washington, D. C.

29-September 1 American Hospital Association, Civic Auditorium, San Francisco

SEPTEMBER

11-15 International College of Surgeons, 12th Congress, New York City

15-22 World Medical Association, Berlin-Hilton Hotel, Western Berlin, West Germany

28-Oct. 5 Pan-Pacific Surgical Association, 8th Congress, Honolulu, Hawaii

OCTOBER

2- 7 American Society of Anesthesiologists, Statler Hilton Hotel, New York City

9-14 American Academy of Ophthalmology and Otolaryngology, Palmer House, Chicago

10-13 American Association of Medical Record Librarians, Olympia Hotel, Seattle

10-14 American College of Surgeons, Clinical Congress, San Francisco

13-15 Academy of Psychosomatic Medicine, Benjamin Franklin Hotel, Philadelphia

17-20 American Academy of Pediatrics, Palmer House, Chicago

17-22 American Surgical Trade Association, Morrison Hotel, Chicago


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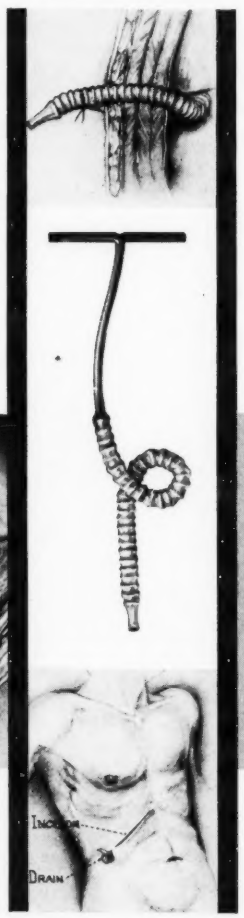


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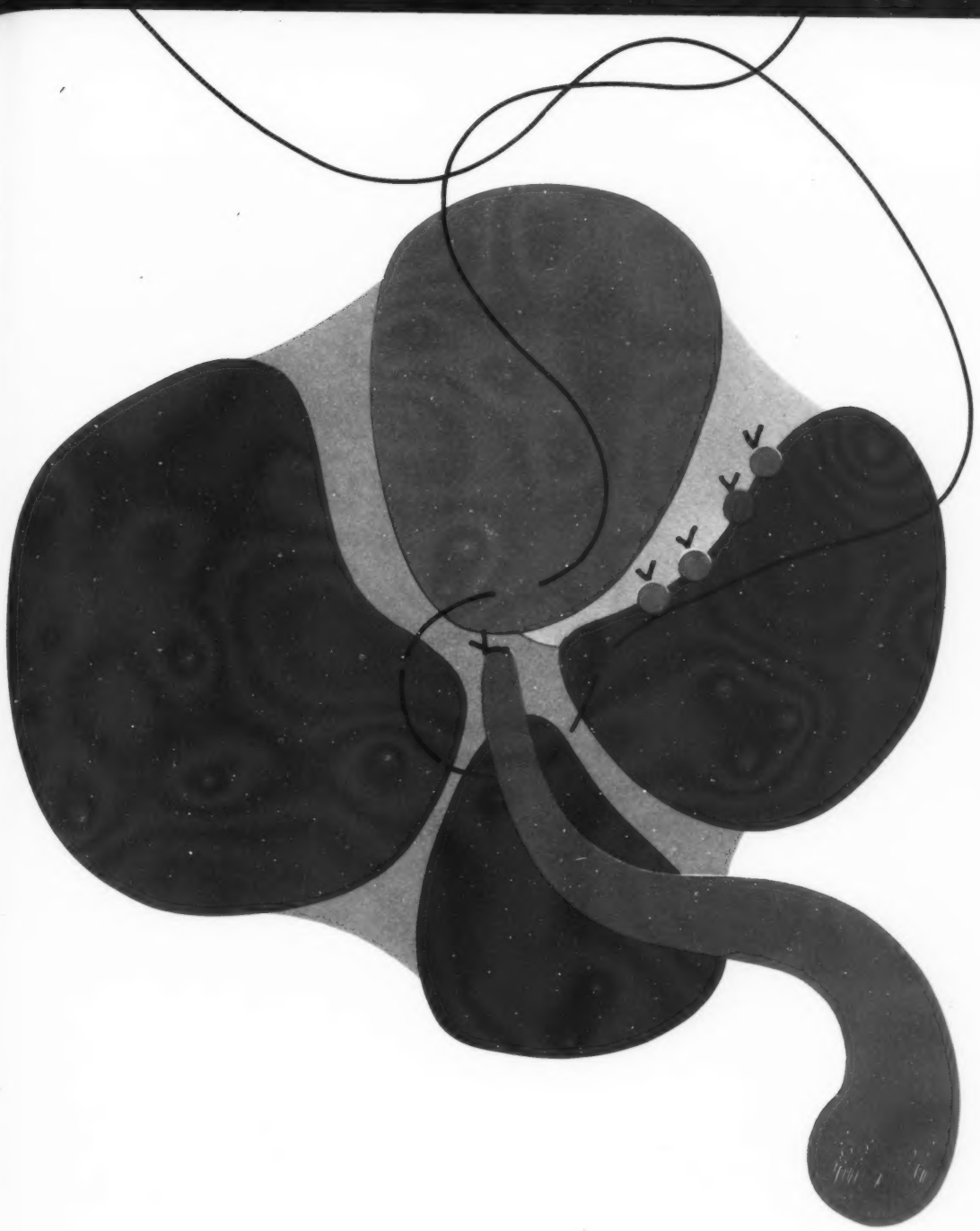

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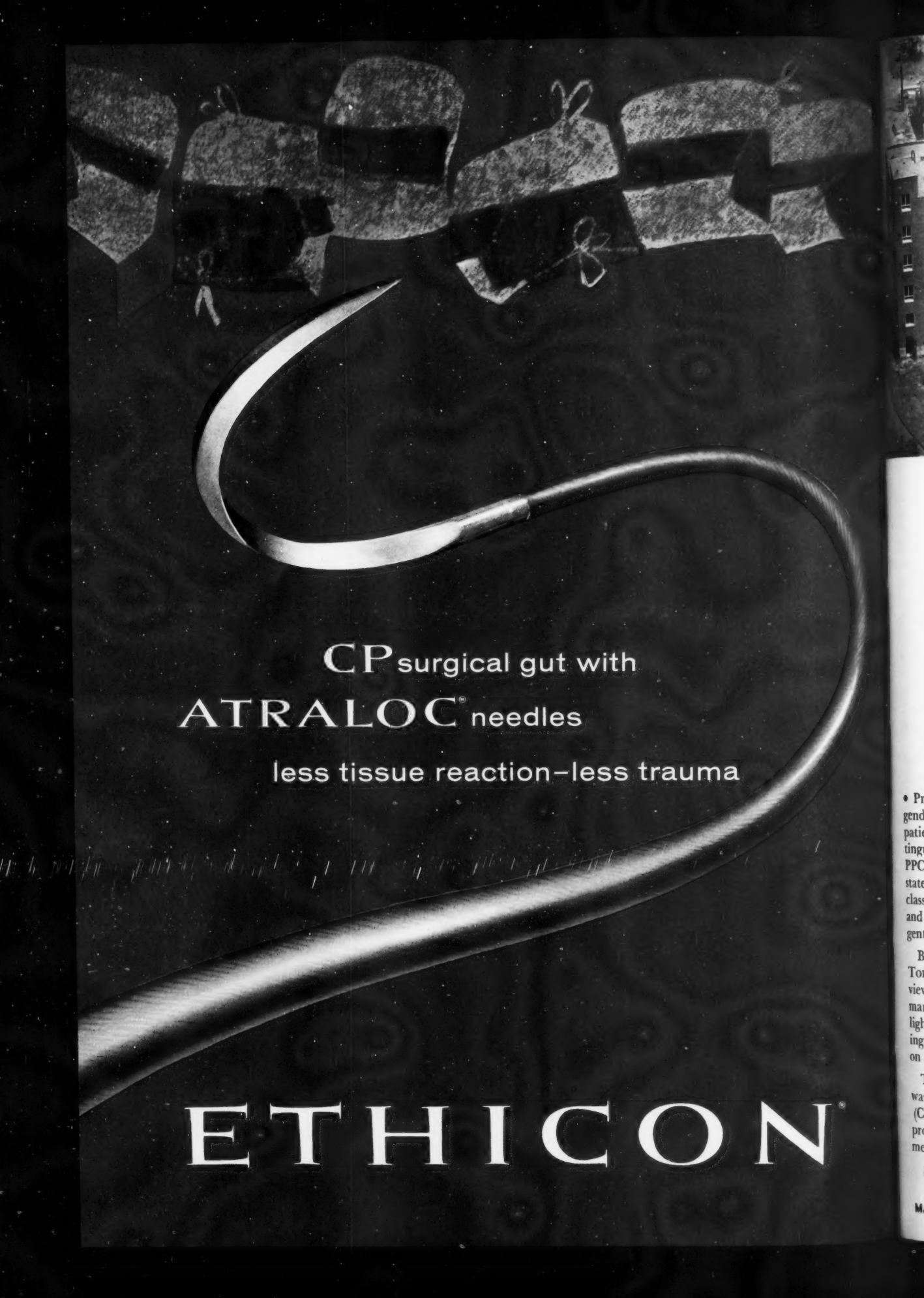
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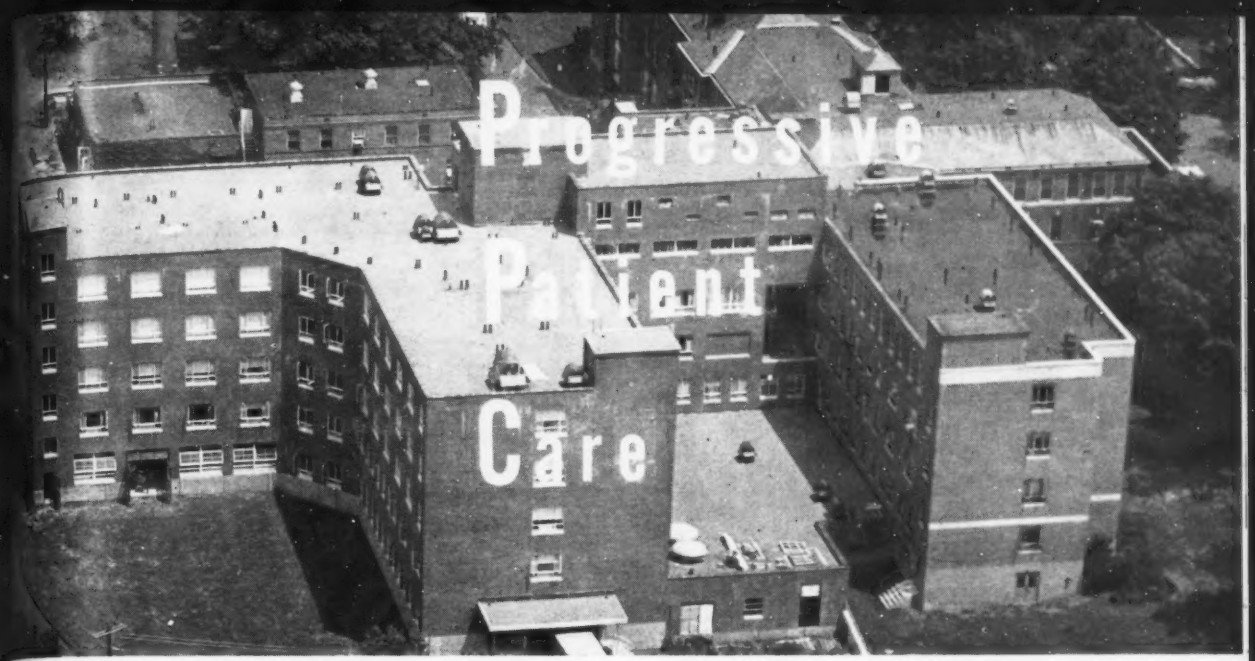



# Patient Care Plan Moves Out of Experimental Stage as Manchester Memorial Hospital Adds $2.5 Million Wing

By Ellen L. Davis
Part I

• Probably no field of administration and nursing engenders more heat than does the subject of progressive patient care. It would seem that neutrality – as distinguished from disinterest – is the no man's land of PPC; there really isn't anyone to provide a buffer state between the pros and cons. The phenomenon classifies itself as the prickly pear of most medical and nursing conventions: no matter how gingerly, or gently, it is handled, it generally draws blood.

But there is light in all that heat. It has been TOPICS' intent, in preparing this series based on interviews and observations in half-a-dozen hospitals in as many states, to screen out the heat and present the light. The series will be a continuing study presenting, as objectively as possible, material and opinions on both sides of the subject.

The first article, which will appear in two parts, was written from material obtained at the Manchester (Conn.) Memorial Hospital, where the all-out PPC program must now be considered past the experimental stage.

In all cases where patients were interviewed, the criteria set down by TOPICS were simple. The patient must have spent a comparable period at the hospital before PPC was introduced, and must have been suffering from an illness similar in severity and taxation to the one responsible for the current admission.

There was no discussion with the patient beforehand by any hospital personnel, nor did any staff member accompany the interviewer. This point was adhered to so rigorously that the reporter got lost in the corridors on several occasions while endeavoring to locate the next patient on the list. Leading questions were avoided; patients were assured that no names would be revealed. All interviews presented in the text are given verbatim.—

*THE EDITORS.*

"Progressive patient care," said Edward J. Thoms, administrator of the Manchester (Conn.) Memorial Hospital, "was not a brand-new idea when we started it here a little less than three years ago. At least one of its concepts, that of special care,

*(Continued on next page)*

was practiced by good nurses long before you and I were born. In those days, the more conscientious, devoted – and well-organized – nurse put the beds of acutely ill patients nearest the ward door. In that way, those in more urgent need of her observation and attention were closest to her, where she could look in on them frequently, and hear them if they were in particular stress.

"And certainly, in all times, the decreasing number of times the patient rings the bell has indicated a diminishing need for bedside care. So all return to health is progressive; we just sort of dedicated ourselves to the philosophy of doing it a different way . . . an over-all correlated way."

"We," in addition to Mr. Thoms, were Dr. Lane Giddings, pathologist, and Dr. Howard J. Lockward, internist. The three men were the corners of the original triangle of the famous Manchester project, which has captured the interest of the medical and hospital fields, and been a prime factor in instigating similar experiments in some 150 hospitals. And though Drs. Giddings and Lockward were so involved since the start that they can hardly think of the project as their adopted child, both call Thoms the real father.

(Since TOPICS gathered on-the-spot material for this article, Dr. Giddings has become affiliated with the Newton Wellesley Hospital in Newton Lower Falls, Mass., and his place on the team has been taken over by Dr. George Lundberg, Jr., internist. Dr. Lundberg, one of the original "dissenters," was also an early and enthusiastic convert, and has been in charge of the self-service units since the early days of PPC.

(Dr. Giddings, according to Mr. Thoms, made a "dedicated contribution" to PPC. The fact that the team continues to function with increasing effectiveness, however, refutes the statement that the Manchester project is a one-man, or even a three-man, program. "It is a program," said Mr. Thoms, "that depends on every discipline, and every individual, connected with the hospital.")

"The idea took hold of Thoms' imagination when he was a medical officer during the war, when the idea of recovery rooms was new," said Dr. Lockward, "and kept on progressing during his studies on hospital administration at Columbia University, and later when he was administrator of the Brooklyn Thoracic Hospital in New York. I don't know when he coined the words 'progressive patient care,' which he calls our 'advertising gimmick,' but I do know that by the time he came to Manchester Memorial in 1956 he was so full of the idea it spilled over."

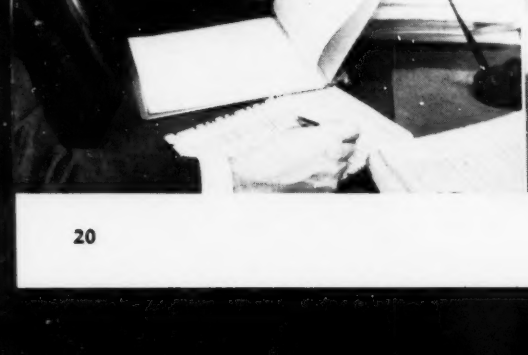
One of the first persons it "spilled over" was Dr. Giddings.

"He was at my house one evening," said Thoms, "and I told him what I had in mind. We talked about it most of the night, I remember, and when he left, I felt there were two of us. Many hospitals feel that their structure rests on a close relationship between nursing and administration. Giddings agreed that the strength of our concept, if we could achieve it, would rest on the relationship between the hospital, the physicians, and the trustees.

"Before we could sell the idea to the relatives of the family, which are what trustees are in the usual setup, we had to sell it to the immediate family within the hospital. Giddings was of inestimable help in presenting our thinking to the medical staff. I almost said 'selling,' but that wouldn't be accurate, because doctors have to sell themselves, or the project has to sell itself; you can't make up their minds for them.

"Shortly after our talk, Giddings and I called together nine or 10 staff men for a meeting. Some of them were receptive to the idea of PPC, some were willing to be shown and some were frankly skeptical. One of them, Dr. Lockward, caught fire right off, and he became the third member of our team. The concensus at that first meeting was, 'all right, you think it makes sense; what do we do next'?"

The next step was the presentation of the plan to the executive committee of the medical staff, which in turn recommended a study by a "special



**The Team:**

**Edward J. Thoms, right, and Dr. Howard Lockward, left, are members of the original three-man team. Dr. George Lundberg, Jr., below, replaced Dr. Lane Giddings last September.**

care committee" made up of the chiefs of staff of the hospital, Thoms, Giddings, Lockward, and the then director of nurses. The latter four visited hospitals in New Hampshire, Rhode Island, and Pennsylvania, where some form of special care had been incorporated into the general nursing program.

"Results of the study," said Thoms, "were reported to the full medical staff, and we then took it to the board of trustees.

"To most of the trustees," continued Thoms, "it was quite a revolutionary approach. It's rather a paradox that successful industrialists and businessmen who are dynamic and forward-looking in their own affairs, tend to shift to the conservative when they step inside a hospital board room.

"What happens in the agenda of most trustee meetings? They concern themselves with capital improvements, and leave patient care to the nurses and administration. It was very important to our program that we not only inform the trustees of the contribution environment makes to patient improvements, but to *involve* them in its achievement. There were only minor objections to our plan; they merely wanted to know if our doctors approved of it. At the next meeting, I took along four of our staff men. In fact, I took them along four or five times, and their discussions finally cinched trustee approval of the experiment.

"We established definitions," continued Mr. Thoms. "We studied the needs of the patient and found an area of the hospital we could use. We studied nursing needs, drugs, and special equipment needs. Dr. Lockward even took charts from 18 different hospital, and culled the best features of each to make up new charts."

It took 11 months of such long-range planning before Manchester Memorial started PPC in April, 1957, with three units: special care, intermediate care, and self-service care.

"It wasn't easy sledding then," commented Dr. Lockward, "and it isn't now. We still have problems that aren't going to be ironed out tomorrow, or perhaps six months from tomorrow. At first we really couldn't find too much evidence to support the opening of three units. It was more an educated medical hunch than anything else. But we never lost sight of our original philosophy that PPC would result in better patient care, and we went about trying to achieve it by what we call 'convincement by involvement.'

"When we appointed committees, we were careful to include staff members we knew firmly opposed the idea. We deliberately developed the committee technic of mixing administration, doctors and nurses to establish a tie-breaking setup. We found that by taking three power authorities, we would get a two to one or a three to none vote. This then automatically brings the trustees into the picture, to act as referee, to swing the balance, and in the course of so doing, they are brought closer to actual patient care."

"Before we went into operation," said Mr. Thoms, "we had a very big educational program to carry out. We had to educate and involve every discipline right at the beginning, and we had to have them eventually participate of their own volition. We didn't pressure or persuade; we let our thinking permeate their own.

"As Dr. Lockward and I go about the country attending meetings and explaining our PPC program, we hear a good deal of comment to the effect that nursing is becoming too specialized, that we need more good, all-round general-duty nurses. We feel quite strongly on this subject *as it affects this hospital,* and in our beginning months when we got vocal on the subject, we often got a gesture in the general direction of the exit.

"In our philosophy, however, we cannot overlook the fact that some 50 percent of our men and women in all fields of endeavor are not actively happy in their work, nor in their roles in the overall production. So we have put the round pegs in round holes by assigning the nurse to the type of work she's best fitted for, and most enjoys. We find it's better for her, and therefore better for the patient.

"Not all nurses," continued Mr. Thoms, "can adjust to all types and degrees of illness met on the general-duty floor. Those geared to the challenge of life and death, therefore, work in special care; those who don't like routine have the variety of illnesses represented in intermediate care; those who dislike change and like to mother their patients are in continuation care (this zone was added to the PPC program in August, 1958); and those who like to teach are in self-care, where they work on the restoration (we don't use the word rehabilitation) of the patient for his return home.

"We had to educate the patients, too, an assignment which has been in the hands of our physicians from the beginning. We expected that such a big change would bring considerable reluctance with it, but the responsiveness of the patients has been beyond all our expectations, and PPC has brought about a much closer doctor-patient relationship.

"We find that PPC is accepted by patients, most of them strange to the hospital, if it is presented to them by their own doctor, to whom they entrust their well-being. They feel promoted when they go to another unit. They are given a new concept of themselves as sick persons. At first, others make the decisions for them (special care); then that state is sluffed off (intermediate care); then they take over the responsibility for themselves (self-care), and prepare to go home.

"We feel physical movement itself acts as a lubricant to this psychological adjustment," continued Mr. Thoms, "and makes it easier for them to outgrow their dependency. In many hospitals, patient preparation for going home consists of restless roaming of the corridors, with nothing to occupy their

*(Continued on next page)*

**The PPC committee meets in the administrator's office. Left to right: Vera Dormer, R.N., director of nurses; Edward J. Thoms, administrator of the hospital; Elmer Weden, president of the board of trustees; and Dr. Howard J. Lockward and Dr. G. A. F. Lundberg, Jr., members of the PPC committee; and Josephine Strachan, of the United States Public Health Service, Washington, D.C., visiting as an observer.**



minds except the urgent desire for discharge.

"We want our patients to get well as people, rather than as patients, and so we treat the individual rather than just the illness. We even," recalled Mr. Thoms smilingly, "eliminated the use of a recovery-room bed because it *looks* sick. We experimented with all types of recovery-room stretchers and beds before we decided on the Hi-low bed."

When the 186-bed hospital was reorganized to set up PPC in April, 1957, 27 beds were set aside in the special care unit; 97 beds were designated for intermediate care; and eight beds in the Crowell House, a converted residence across the street from the main hospital building, comprised the self-service unit.

In June, 1959, a two-and-a-half-million-dollar wing was opened at Manchester Memorial, bringing the total number of beds up to 300. Financed partially by a Hill-Burton grant of $275,000; a loan of $600,000; a building fund of over $800,000, and the remainder from trust funds, the building added five new floors – three patient floors and a basement and sub-basement for ancillary services – to the hospital.

On the third floor is a recovery room adjacent to the operating rooms in the older addition, units for the seriously ill, a flexible zone, and the central supply room. The second floor contains units for

## *The patients say...*

**Mrs. A.:** "About five years ago I had colitis and came in for observation. I was put in a ward downstairs, and the woman in the bed next to me, who was senile, cried all night and made everything worse. They couldn't move her out, but they did finally manage to get me into a two-bed room. Now here I am again, this time into intermediate care for a slight operation. After I came back from the operating room I wasn't in strange surroundings—I knew my way around. I can get up and move around without seeing a lot of seriously sick people to upset me. I'm contented right here."

**Mrs. J.:** "I was here in 1958 for surgery. I had a semi-private room, and the nurses and care were very good. I progressed right along, like the rest of the patients. By the time you go home, you feel you can do things alone; it doesn't do to get too dependent, you know. This time I'm in for observation in this three-bed room with bathroom. I don't have to get undressed and lie in bed thinking about what might be wrong with me. I'm up and about taking care of myself, feeling like a regular human being."

**Mrs. D.:** "I'm a diabetic and have been in all three areas in the past year. Before that I hadn't been hospitalized since 1952, when I had good care, but nothing to compare to this. I like self-service because I don't like going around feeling sloppy; I like to be up and dressed. In special care—there's nothing like it in the world up there. After a serious operation, my heart kicked up, and I wouldn't be here today if it weren't for the round-the-clock care I got. In this unit I like the visiting hours from 2 to 8 because my husband can bring the children in to visit."

**Mrs. W.:** "I've had a number of operations in the past, and have had special nurses. Sometimes I had wonderful care, but I often had ordinary instead of special care. I was operated on last Thursday, and this is my first experience with this kind of special care. There's always a nurse in the room 24 hours a day, and all I have to do is speak and she's right there. It's like the best special care I got in my previous experiences when I had private-duty nurses, except it's less expensive, which is a big item when you've had a lot of illness. My surgeon says I can go into intermediate care pretty soon, and then self-service, which I think will be a big achievement for an old lady like me.

**Mrs. T.:** "I had several operations in the past, and when I came into the old hospital, I didn't know where I was, the beds were so close and dark. I dreaded every time I had to come in. This time I came in

intermediate care. The first floor is given over to self-service units, a lounge for ambulatory patients, another for visitors, and a chapel. In the basement are the physiotherapy department, the laboratory, admitting ward, and the emergency room. In the sub-basement are the laundry, the receiving department, and the housekeeping department. There are acoustical ceilings throughout, and the operating room, recovery room, pharmacy and physiotherapy units are air-conditioned.

Any patient in a serious condition, with even the slightest chance of recovery, is placed in a special-care unit, regardless of whether the case is medical, surgical, infectious, psychiatric, orthopedic, or gynecological. The hospital prefers not to put terminal-care patients in the zone, to avoid the impression obviously detrimental to morale, that this is the zone where people go to die.

There is one graduate nurse and one practical nurse for every five patients in each special-care unit. Special-duty nurses are not permitted in the units. The nurse's station is elevated so that the nurse can be seen readily by patients, and to facilitate charting by the nurse. Patients are not segregated by sex, age, or illness, since they are too sick to care about the vital statistics of their fellow patients at this point.

Since the recovery room is open only six days a week between 8 a.m. and 4:30 p.m., any patient who has a general anesthesia when the recovery

(*Continued on next page*)

**A patient is admitted to a special care unit. Two ambulance men, above, hold the stretcher while two registered nurses and a nurse's aide ease the woman gently onto the bed. There is always a free bed for emergency cases, and patients are taken directly to the unit, by-passing the admitting office. Minutes later the patient, below, is examined by a physician, the nurses and the aide remaining in attendance.**

for a hysterectomy, and the surgeon said I should go to Crowell House while I had my X-rays before the operation. I told him I didn't mind going into the hospital, but hindsight tells me I would have gone crazy in a hospital room, now I've experienced Crowell House.

"I was a guest there five days before my operation, and we had our laughs because we were all in the same boat, with castor oil and things like that. A man and woman were both in with kidney trouble. He turned out to have only one kidney, and she had three. They had a good time figuring out how to even things up.

"After the operation, I went into one of the new special-care units, and when I came to it was so pretty and bright and spacious I felt better right away. When I came into the intermediate-care zone it was the first time I'd been alone since Crowell House, and I missed it. But now we've located each other—the ones who were there when I was—and we visit and phone. I feel as if I'm with my family again."

**Mrs. O.:** "I am a diabetic, and came here for the first time three years ago for a foot infection. This time I have been here 20 days to have the big toe of my other foot amputated and my teeth pulled. This kind of care has just been comfort from beginning to end. I was in special care for both things, and nothing could go wrong that someone wasn't right there taking care of it. Then I went to flexible care, and I've been here in intermediate care. I expect to go home today. I get everything I need here, and all along I could feel and **see** my improvement in my surroundings."

**Mrs. K.:** "In 1951 I come in for observation, and finally had an exploratory laparotomy. It was very hard on me because there was no nurse around and I was bleeding from the mouth. My sister finally got hold of one in the corridor, but I was scared, and it made me nervous having to wait so long for the bedpan sometimes. A couple of years ago I came in for intermediate care, and it was as different as day and night. This time I'm in for possible surgery, but it doesn't bother me like before because I know I'll get special care if they do operate."

**Mrs. A.:** "I've only been in self-service this trip, and I think it's wonderful. It's really not like a hospital; you get acquainted with people, and you can go to the kitchen for a cup of coffee or tea. It's such a nice, large room, and we do enjoy visiting. Besides, it makes sense to me—they're always talking about the nurse shortage."

room is closed is sent to the special-care zone until he has reacted.

Visitors are allowed at the bedside only five minutes out of every hour, though they may wait in the visitors' lounge. Into the lounge, too, to keep them out of the way, go plants and flowers received for patients. These go along with the patients when they are well enough to be moved to the next care zone.

Each special-care unit is equipped with a cart designed to carry all necessary supplies, such as treatment trays, syringes, sterile solutions, and so on, which is stocked by central supply, and changed every eight hours. There is also a linen cart; storage closet for large equipment such as oxygen tents and positive-pressure machines; a small autoclave for sterilization of contaminated equipment; refrigerator, medicine chest, and toilet. Each partitioned room has a wash bowl with running water; all are connected by an intercom system with the nurse's station.

In addition, to the regular charts, a 24-hour vital sign sheet, and a 24-hour fluid balance sheet are kept on each patient.

The registered nurses in the special-care zone are expected to be able to give fluids intravenously. They must work at least four days a week, two weekends out of four, and half the holidays, and must be in the zone for two months before they receive the 10 percent of basic salary differential.

Patients are admitted directly through the head nurse on the zone from the outside on the recommendation of the doctor, or are transferred postoperatively from the recovery room if the doctor feels the patient needs special care. The patient stays in the unit as long as the doctor feels he needs special care. Then the doctor, in conference with the nurse, decides whether the patient shall be moved to the flexible-care unit or to an intermediate care floor.

The head nurse on the special-care unit has complete charge, and her nursing personnel are given a one-month orientation to train them in the routine developed by the unit's committee. They are especially trained in the art of continuing observation. The patient's pulse is taken every two hours, and the specific gravity of urine checked routinely. Now, instead of having a patient pass out, the nurses get a warning, and can sometimes step in and salvage the situation.

The head nurse sees to it that there is always a free bed, and doctors and the community alike know that an individual can be admitted at any time. Whether or not the person is indigent is not considered.

If the nurse has a full house, she can use the family waiting room as a room. She can also — always with the permission of the doctors concerned — move the least ill to another unit.

The flexible-care area is an 18-bed section set aside on the periphery of the special-care zone to provide flexibility to the plan.

"Visitors used to be a problem in the special-care zone," commented Dr. Lockward. "Families would come and sit endlessly, getting edgier all the time. We couldn't force them to go home and rest, so we took the furniture out of the room. Now their feet get tired, so they go home, have something to eat and get some sleep, and are more amenable in the morning. Even more important, the patient also gets a much-needed night's rest.

How About taking
Life
EASY
WE WANT YOU TO TAKE A GOOD REST
FOR THE BMR TEST
(BASAL METABOLISM RATE)
HERE ARE SOME INSTRUCTIONS HOW
1. On the evening before the test you will be weighed. There is no pain or discomfort involved in the examination at all. You must cooperate down to the smallest detail in order to be properly relaxed, so the test will be effective
2. The test is easy. All you have to do is breathe pure oxygen through a tube in your mouth while your nose is clamped shut.

**The morale of patients is of prime importance in PPC, and every effort is made to inform them of the why-and-how of diagnostic tests. The BMR test sheet shown is typical of the human and warmhearted approach — a far cry from the usual bald statement, "No breakfast for you tomorrow."**

"That's just a small side issue, of course," continued Dr. Lockward. "The big thing is knowing that you can always get a patient admitted immediately. Take the case of an elderly patient with a heart attack before we instituted PPC. The physician asked the night supervisor if the patient could be admitted. The nurse had to go down to the front office to see if there were a bed available, and informed the physician there was one on the second floor. The call was transferred there, bringing the nurse down the corridor to answer the phone.

"All this was just the beginning. To obtain oxygen, the nurse called the maintenance man, who couldn't be located right away. The patient and doctor arrived. Forty minutes later the patient was under active therapy — during which time other patients' bells must have been ignored.

"Contrast that with the case of an elderly woman with pulmonary edema who came in last night. The physician called the special-care switchboard; reservation of a bed was confirmed, and orders taken. When the doctor and patient arrived a few minutes later, everything was ready for the patient, with no disruption of regular hospital activities. The admitting office is by-passed entirely to expedite admissions. This is the situation 24 hours a day, seven days a week. And when a physician with a case in special care is called away or has another emergency, he selects another physician to care for his patient in his absence."

NO SMOKING
NO VISITORS
QUIET
DO NOT DISTURB
3.
After midnight before the test you must not eat or drink anything but water. You must remain in bed.
You may not have visitors.
You may not read or smoke.
You may not get out of bed.
You may not clean your teeth.
You may not move around.
You may breathe,
You may go to the bathroom if permitted.
4.
On the morning of the test you will not be served breakfast.
The door to your room must stay closed, or if you are in a semi-private room the curtain will be drawn around your bed.
AFTER THE TEST
BE HAPPY AND ENJOY YOURSELF!
5.
You may eat and drink, read and smoke, have visitors, may get out of bed, clean your teeth, play the radio and be happy.

**Informed of the part he must play in making the test a success, the patient participates in procedures rather than allowing himself to be subjected to them. A similar palatable approach is used in patient diet education, which will be covered in next month's article.**

One of the places where most PPC programs are missing the ball, according to Dr. Lockward, is in the flexible zone. "Private rooms in the flexible area," he said, "should be kept to an absolute minimum; otherwise the patient doesn't want to move. And in our book, movement is progress."

The intermediate-care zone, staffed by one R.N. and one aide for every eight patients, is for patients not dangerously ill, but not yet completely ambulatory. These patients generally have a predictable hospital stay, such as for appendectomy, hernia, or routine fracture with cast application. This zone cares for the greatest number of patients, and many of them do not go elsewhere during their hospital stay. Many, however, go into self-service, and of course some go the other way – into the flexible or serious zone. PPC works both ways to fill individual patient needs.

"We didn't give too much study to intermediate care," commented Dr. Lockward, "because we reasoned that this would just be regular care as we are accustomed to giving it. This was a major mistake! From the nurses' point of view (incidentally, we do not allow private-duty nurses in this area), all the glamor and change were going on in the new departments, and there was an initial let-down in their morale."

Much of the feeling, according to Mr. Thoms, stemmed from the inevitable comparison between what the patient considered the "average" care of the intermediate zone and the intensified care of the special-care zone.

"It seems," he said, "that what used to be considered good was no longer good enough. And that feeling, interestingly enough, became a factor in raising the level of care in the intermediate unit to far above average.

"Nurses, who took their problems to their unit committee for discussion, basically wanted to do 'as good nursing' as their colleagues in the intensive-care units. Once they took a collective look at the responsibilities and possibilities of their own zone, they planned their jobs, and their morale went up as they put those plans into action.

"With better planning, each patient gets better care. Under the old system, an emergency could tie up all the personnel on the floor, to the detriment of the other patients. Now patients ill enough to classify as potential emergencies are not on the floor. They are in a special-care unit, where there is the skill, the equipment and the established pace to handle them.

"The too-demanding patient is no longer a drag on her, either, because if he's well enough to complain just on general principles, his doctor considers him well enough for transfer to the self-service zone!

"Patients in this zone used to be wakened at 5:30 a.m., so they could be washed up and ready to eat by 7 o'clock," continued Mr. Thoms. "The patients weren't getting the rest they needed, and there was time for them to get increasingly irritable about it before breakfast. The problem was given to the unit committee, including the dietary department, and one floor was given over to experimentation.

"The committee found that the problem wasn't related to dietary, but to the time medication was given. The time was changed and patients awakened at 7 o'clock for a later breakfast. Results of the experiment were reported to the committee, and the new routine was adopted. In addition to having happier patients, we were able to economize by dispensing with two nurse's aides."

(Part II of the Manchester story, which will appear in the April issue, will cover self-service care, continuation care, and the dietary department.)

# Rehabilitation Institute of Chicago Restores 1,600 Patients to Partial or Complete Self-Sufficiency

It was Monday, the day amputees discharged from the Rehabilitation Institute of Chicago return for their regular checkup and consultation. Physiatrists, surgeons, orthopedic consultants, the institute's chief therapist, and representatives of protheses manufacturers, gathered at one end of the room. Rows of chairs at the opposite end seated social workers, counsellors and other institute personnel, together with visiting therapists and nurses, and TOPICS' reporter.

We were given a brochure about the institute, and we leafed through it while we waited for the session to commence. On the last page was a single sentence, over which we lingered long and thoughtfully: "The end is the beginning."

The first patient, an elderly woman, entered through the side door. She walked slowly, with labored effort. She glanced rather apprehensively—almost apologetically—at the group of specialists, and a feeling of tension mounted in the quiet room. It was broken by the comment of an orthopedist, who said flatly: "She's lost it; she's gotten into bad habits."

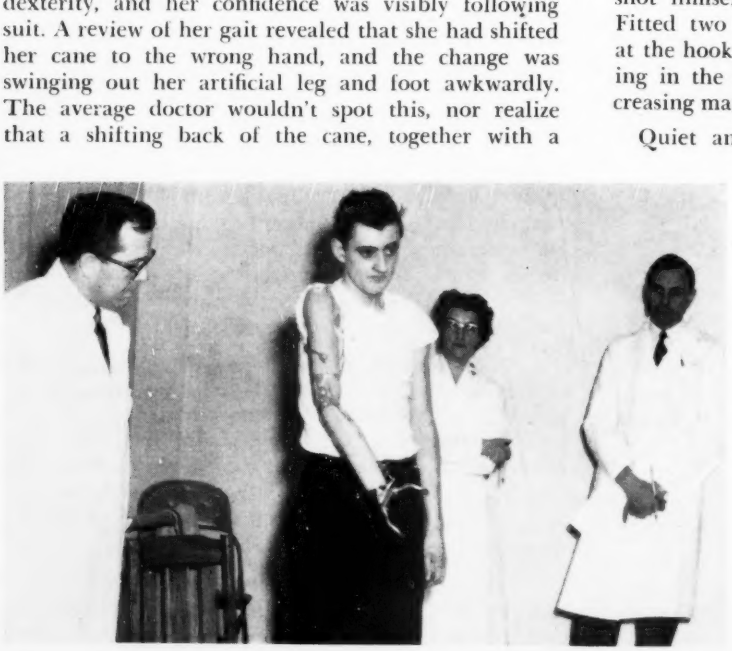
It was apparent that what she had lost was her dexterity, and her confidence was visibly following suit. A review of her gait revealed that she had shifted her cane to the wrong hand, and the change was swinging out her artificial leg and foot awkwardly. The average doctor wouldn't spot this, nor realize that a shifting back of the cane, together with a slight adjustment in the knee joint of her prosthesis, would correct it. These accomplished, her gait resumed a rhythm, her face smoothed. She flashed the group a quick, bright smile, and if there was not exactly spryness in her exit, there was considerable spirit.

A husky 58-year-old farmer came in next. He had originally suffered severe burns, with deformity, but the hand involved remained usable until carcinoma of the skin developed, necessitating amputation. Unaided, he has fashioned a harness and hook of sorts from straps, buckles, and other miscellanea, which he used with phenomenal skill until the State of Illinois Division of Vocational Rehabilitation provided funds for a proper prosthesis, and training in its use at the institute.

His only complaint this trip was that the strap was pulling too tight across his chest for comfort. This eased, his barrel chest rose with a deep breath, which he expelled slowly, and finished off with a grin. Dismissed, he raised his artificial arm in a gesture of thanks as he left.

Following was a 16-year-old boy who had accidently shot himself through the arm while deer hunting. Fitted two weeks previous, he had taken one look at the hook, and hated it. A week later, he was working in the shop, fascinated and absorbed by the increasing maneuverability of his "hand."

Quiet and unassuming in his demonstration for



**Patient is a teenager who suffered amputation as a result of a hunting accident. He is shown at the amputee clinic with, l. to r., Robert G. Addison, M.D., one of the institute's orthopedic consultants; chief therapist Hildegarde Myers; and Colin McLaurin, chief of the Northwestern Prosthetics Research Laboratory, which has its setup in the institute.**

**Following the application of the prosthesis, and training in its use, the boy is now back in school, with his schedule arranged for maximum attendance and regular treatment at the institute.**

the experts' evaluation, his lips tightened and his eyes darkened when his prosthesis jammed suddenly and refused to move. Nothing else in the room moved, either. Learning *not* to help is the first, the hardest, and the most invaluable lesson institute personnel learn in working with patients. The boy worked grimly for a moment, then let out a triumphant "hah!" as the hook responded. A limb maker took over and righted the mechanical difficulty.

A 13-year-old boy was next. He had slipped, sending one leg into the blades of a moving lawn mower. He wore a molded leg attached to a solid foot with cushion heel. The problem he mentioned was perspiration from the plastic—a problem for the research department. The problem which he didn't mention, but which was self-evident, was his mother—a problem for the counselling service.

The last patient was so contagiously buoyant that chuckles of appreciation broke out among the spectators as she went through her paces. A below-the-elbow amputee for malignant tumor, she had had a prosthesis for a month, which time it spent in residence in her clothes closet. No one had taught her how to use it, and after a few abortive tries she had abandoned it.

Learning of the institute, she came in for two weeks as an inpatient, receiving reduced dormitory rates as an out-of-town patient. Just back from a trial weekend at home, where she had found that by depressing and shrugging her shoulders as she had been taught, she could handle all her household chores except removing the wet wash from the washing machine, she bubbled with excitement.

During this regular session, which patients attend as long as the need exists, those with leg amputations are required to do tests for "setting down" on their prostheses, not only that the condition of the stump may be checked to make sure there is no vascular deficiency, and the socket examined, but to observe their method of putting on and taking off the prosthesis. If correction or further instruction is needed, it is given on the spot.

While the meticulous examinations and thoughtful consultations were going on at the specialists' end of the room, there was ample time for plain, garden variety observation at our end of the room.

It was patent that all these patients, with their wide divergence in age, background, economic status, temperament and level of recovery, had a good deal more in common than prostheses.

There was about all of them a calm sort of confidence—even in the youngster with the over-protective mother. Their collective gaze was direct, not marred by self-pity. It seemed to request of the observer only one thing: acceptance as a human being.

To be admitted at the institute, patients must be referred by physicians or recognized health agencies. To graduate, they must bring to bear all their resources (largely latent during their pre-institute experience) of courage, determination, and above all else, self-help, towards the restoration of their hopes, confidence, dignity and usefulness. No one has flunked out, and there have been over 1,600 students.

The sentence on the last page of the brochure came back to mind with growing clarity and stature.

Economically, rehabilitation stands as squarely on its own resources and accomplishments as do the rehabilitated.

Figures of the Federal Department of Health, Education and Welfare show that for the fiscal year ended June 30, 1958, 74,000 persons were rehabilitated into gainful employment. Of this number, 55,000 had been unemployed, and 15,000 had been receiving public assistance amounting to $14,000,000 annually.

The 74,000 men and women earned almost $148,000,000; the cost of the rehabilitation was $13,000,000. Subsequently, this group paid $10 in Federal taxes for every dollar spent for their rehabilitation. According to an article in *The Journal of the A.M.A.*, 250,000 Americans annually become sufficiently disabled to require rehabilitation; and there are at least two million physically handicapped adults who could be rehabilitated to the point of gainful employment.

The Rehabilitation Institute of Chicago is essentially a self-supporting organization, collecting fees

*(Continued on next page)*

**Also shown at the amputee clinic is a patient who suffered severe burns many years ago, and subsequently developed skin cancer. Examining his prosthesis, which he complained was pulling too tightly across his chest, is Colman J. O'Neill, M.D., another of the institute's consulting orthopedists.**

**The State of Illinois Division of Vocational Rehabilitation provided funds for the prosthesis and training at the institute; both are now concerned with vocational placement of the patient, and are working with him towards achieving this goal.**

**Patient at left is a quadriplegic as a result of an automobile accident. Progress has been slow but steady due to strong motivation and determination. She has progressed from full body cast, to wheelchair, to long leg braces and crutches. She ambulates both in and out of parallel bars, but never without a therapist — yet.**

**Patient in the center, 78 years old, learned to walk extremely well with crutches, has now received her prosthesis and is in the final training stage of ambulation.**

**Patient at right suffered a stroke, resulting in right hemiplegia and aphasia. She has recovered her speech to a great extent, and has been provided with a drop foot short leg brace to help with ambulation. Here she is using "public transportation" in a replica of bus steps.**

**REHABILITATION continued**

from welfare agencies, insurance companies, industry and the patients themselves, though some of the latter, of course, are charity cases.

The institute was started through the efforts of Dr. Paul B. Magnuson, who, at the time of his retirement from practice in Chicago, was one of the country's well-known orthopedic surgeons. His experience as an industrial surgeon convinced him of the need of rehabilitation for many of those who suffered industrial accidents.

In 1954, he enlisted the interest and support of a group of business leaders in the city, the present building was purchased, and the institute began to function in a limited way with a small nucleus staff and temporary equipment.

Since that time, it has consistently had the active financial support of many corporations, foundations and individuals, and in 1956 undertook the remodelling and the addition of two floors, which permitted the acceptance of inpatients in June of 1958. The completed six-story building has room for about 75 bed-patients, with space and facilities for their daily treatment, as well as for 75 daily outpatients.

Directed by Bernard J. Michela, M.D., a graduate of Cornell Medical School, and a specialist in physical medicine who received his training at the Mayo Clinic, Georgia Warm Springs Foundation, the Institute of Physical Medicine and Rehabilitation in New York City, and at Brooke Army Hospital, the institute is designed, not to duplicate other care, but to take over where the general hospital leaves off.

Its working philosophy is based on the team approach, providing consideration and planning not only for the medical, but also for the social, emotional, and vocational needs of the patients. The objective of the rehabilitation evaluation is to ascertain realistic goals after all of these facets of the individual's problems have been considered.

The institute team is indoctrinated with, and does not forget, three basic facts: Each discipline has a specific contribution to make, and each staff member is charged with understanding the skills of the others in order that an effective team approach may be carried out; a team can function effectively only when the efforts of each individual member are coordinated into a unified whole by one member of the team; and that while it is highly desirable that all patients be provided with services from each team member, there will be individual situations wherein certain services will not be required—this determination to be the major responsibility of the medical director.

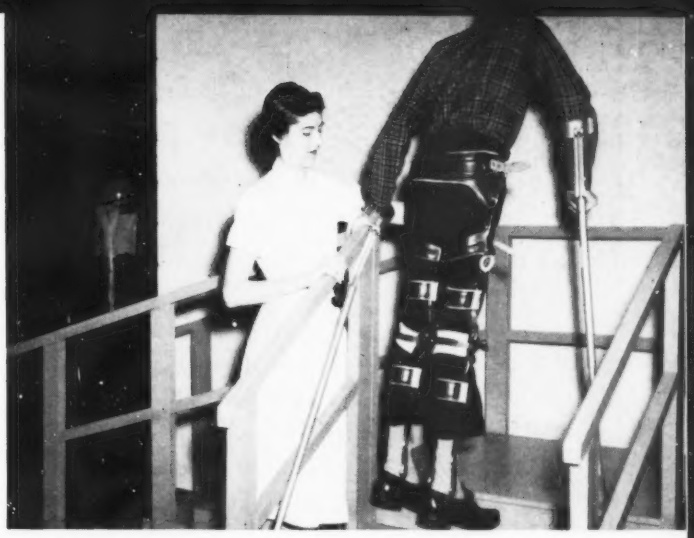
Prior to acceptance for evaluation, the referring physician or agency is asked to forward all the patient's reports and records. If rehabilitation treatment is advisable, he is scheduled for an "Intake Examination" by the medical director, or his associates, to determine whether the services be rendered on an inpatient or outpatient basis. The examination also serves to determine that there is no contra-indication to the physical treatment program, and to determine any associated or previously unrecognized medical conditions that require therapy. Inpatients average about 90 days at the institute, though quadriplegics may remain for many months.

Accepted as an inpatient, all records and charts go to the ward to which he is assigned, and the floor nurse takes responsibility for routine procedures as established by the medical director. It is the responsibility of the physician directly in charge of the case to explain the program to the patient and his family.

Within a week of admission, the case is discussed at a regular Evaluation Conference, when an attempt is made to establish a realistic goal for the individual, and further studies and treatment arranged. Re-evaluation conferences by the team members concerned are held at intervals of four weeks maximum.

There are no age limitations, but to date the youngest patients have been teenagers. Younger children will be accepted as soon as feasible, but the pace of expansion has been deliberately controlled in order that patient load and staff strike a proper balance. And an adequate staff is as difficult to attain at the institute as it has been at all the rehabilitation centers covered by this TOPICS' series—which is very difficult indeed.

There are 5,000 registered occupational therapists;



**The young man on the right is a paraplegic patient whose paralysis resulted from injuries sustained in an automobile accident. He was given a complete evaluation at the institute, following which the Illinois Division of Vocational Rehabilitation authorized a program which allowed him to return to the institute two months later for treatment and training — still in a wheelchair.**

**At the time of discharge, his medical problems were minor and controlled. He had been trained in the use of long leg braces and Canadian crutches, and the "swing through" gait he is shown using here to climb steps. Aptitude tests have revealed his abilities, and DVR is now working with him in his best fields towards vocational placement.**

there are 10,000 jobs to be filled. Specialists in the field of physical medicine and rehabilitation are in even more critical shortage. All personnel are given orientation in therapy and medicine, and the institute maintains an inservice nursing program. Even specialists must be trained, or their approach directed, in order to attain their top effectiveness as a team member, and to help them discipline themselves to stay the helping hand from too-active participation in the patient's recovery.

Though there are a few private rooms, occupancy is discouraged, for while group therapy is not practiced as such, it is a vital part of the program.

"Example, encouragement—even competition—are extremely important," said Dr. Michela. "In rehabilitation, more than any other field of medicine, no man is an island unto himself, and none can be rehabilitated by sitting alone in a corner. He needs the help of his brothers to learn how to help himself.

"Patients in the occupational and physical therapy sections are all striving for a common goal, of course, but are often approaching it by different routes, in various stages. One, for instance, may be toiling up and down the steps of a bus mockup built and given us by the Chicago Transit Authority; another is undergoing gait training in the aisles set aside for the purpose; another is patiently picking up and putting down objects of various sizes with the aid of a hook; while another is making a piece of furniture for his room back home. Still, all are participating in group therapy, and they are subtly and constructively played against one another."

Everyone who possibly can, makes his own bed, and though first efforts may be a bit lumpy, it's *his* effort. Everyone except the quadriplegics bathes himself. If he prefers a tub, and can manage, fine; if not, a shower while seated on a wooden chair is refreshing and rewarding. Only quadriplegics are fed on the floor -- and not all of these. The rest go to the cafeteria, and though feeding oneself may be a slow and arduous task, the food tastes better that way.

Everyone is dressed in street clothes every day. "It's good for their morale, and their eagerness to look their best produces minor miracles of accomplishment."

Teenagers also continue their schooling at the institute under the guidance of a teacher, through arrangements with the Chicago Board of Education.

"Since most fees come from insurance and industry benefits," continued Dr. Michela, "housewives and children have heretofore been more or less left out in the cold. An anonymous contribution of $100,000 in March, 1959, enabled us to establish a trust fund to help bring this group into the institute . . . especially the children whose parents, even the prosperous ones, have been all but bankrupt by the expenses of the acute stages of the accident or illness, and have nothing left for rehabilitation. Endowment in this area will accomplish much more than free beds could contribute."

The costs of inpatient care, which includes room, board, nursing, medical therapy, x-ray and laboratory —but not prostheses—run about $1,000 a month. The fees charged, however, depend on the individual, not only in terms of his needs, but his ability to pay.

Charge for outpatient care is about $200 a month, again scaled to ability to pay. Psychiatric guidance, significantly, is directed more towards the family than the patient.

The fifth and sixth floors of the institute make up the hospital section. Pat Laughlin, director of nurses, has under her direction a head nurse and a rehabilitation nurse, the latter also engaged in the instruction of nurses. The staff is completed by eight registered and practical nurses, five aides and three orderlies.

The fourth floor houses the Personal Counselling Department, headed by Dr. William Kir-Stimson, psychologist, with Alice Moran and Faye Katzen as medical social workers. The department concerns itself with social service, vocational guidance, psychology and speech therapy, and is designed to assist the individual in adjusting to his disability, and becoming a productive member of his family and society. Physical disabilities often have an emotional impact

(*Continued on next page*)

**Young farm wife above, practicing picking up objects of various sizes and shapes, adapted very quickly and skillfully to use of her prosthesis, and can perform any of her usual household chores except removing heavy wet wash from the washing machine.**

**REHABILITATION continued**

which requires close guidance.

The speech therapist is especially concerned with patients who have speech problems as a result of a stroke.

Perry Concholasis is vocational counsellor, and the institute maintains a close working relationship with a committee of top personnel from large firms in the Chicago area which cooperate in training and placement of discharged patients. There is no overall placement service in Chicago, though such is contemplated; however, practically 100 percent placement is being achieved with the current method.

Also on the fourth floor is the Northwestern University Prosthetic Education Center directed by Dr. Warren Perry. This project, a regional training school under the sponsorship of the university, is financed by a Federal grant. Last fall, the first courses were started to instruct doctors, therapists, prosthetists and rehabilitation counsellors in the latest prostheses, and how to fit them, and how to train patients to use them. Already there is a waiting list for enrollment.

The school has its own shop on the fourth floor, where prosthetists are trained to make artificial limbs. Patients get their limbs and braces on prescriptions; the shop does not manufacture them. One woman is using, quite successfully, a new prosthesis developed at the institute, to replace a leg with no stump.

The third floor is devoted to Occupational Therapy – also well-termed as "curing by doing" – under the direction of Fred W. Sammons, chief, and four registered therapists. Prescribed and directed by the chief of physical medicine, the aim here is fourfold: to improve strength of muscles and motion of joints; to develop coordination and motor skills; to explore vocational goals and work tolerance; and to provide Activities of Daily Living training.

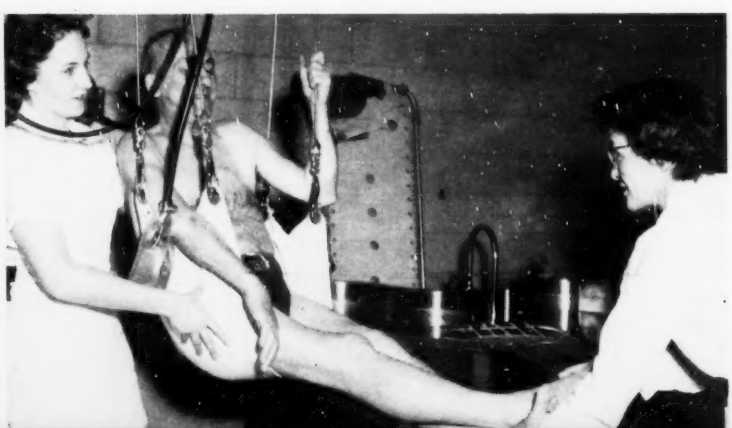
On the second floor is the Physical Therapy Department, headed by Hildegarde Myers, assisted by a staff of six fulltime and one part-time registered therapists. The aim in this section is to increase range of motion and muscle strength and function; to teach the patient to walk with the aid of prostheses or braces; and to provide Activities of Daily Living. Hydro-therapy includes whirlpool treatment; a pool with a maximum five-and-one-half foot depth; and an Ille tank – a walking tank where the therapist can guide and work with the patient without getting into the pool itself.

The first floor contains the administration offices and the cafeteria. On the ground floor is the Northwestern University Prosthetic Research Center, headed by five draftsmen-photo specialists. Also under the auspices of the university, and supported by a Federal grant, the center works fulltime on research to develop better limbs and fitting methods in their own setup, which includes a machine shop.

Two of the major projects of the research center are a new method of taking stump measurements prior to the fitting of the prosthesis (fit is the major objective, thus padding and lining are rarely used), and the development of a new prosthesis for above-the-elbow amputees.

There are two methods currently in use to obtain stump measurements. One is to bandage and wrap, as in the making of any cast; the other is by straight measurements. The cast method depends largely on the skill of the person handling the bandaging, and the condition of the stump varies somewhat from day to day.

The hydrostatic system of stump measurement developed by the research team uses fluid pressure in a static form for uniform pressure – enough to bear the full weight of the amputee. Impressions of the stump under various pressures and stump conditions



**The man at left, a stroke victim, has just completed treatment in the hydrotherapy room of the physical therapy department. On discharge he was walking with the aid of a short leg brace and one cane, and had become almost completely independent.**

**He is continuing an outpatient program of physical therapy in his own city, returning to the institute for periodic followup. He is now looking forward to an early return to his company in his capacity as a member of the board of directors.**

**The patient on the right suffered a traumatic accident resulting in quadriplegia. After initial hospitalization elsewhere, he arrived at the institute where he continued in a Stryker frame until he was graduated to a tilt table to prepare him for a wheelchair.**

**After surgical closure of a decubitus, he is now permitted to use a slantback wheelchair for a certain length of time each day, which time will be increased as he improves. The forearm device was designed to permit him to feed himself from a tray adapted to his chair.**

**Referring diagnosis of the patient to the left was a suspected Guillain-Barre, a disease which has a crippling effect similar to polio, but which can be treated successfully. The diagnosis is unconfirmed after thorough neurological evaluation and workups.**

**She has, however, progressed from wheelchair to Canadian crutches and, currently, to using only one cane. She is shown making a salad as part of her activities of daily living training.**

(flexion and other variants) are recorded on the special machine.

In conjunction with the stump measurement research, studies are also being made on methods of recording objective measurements of pertinent amputee characteristics (such as stump range of motion and stretch), together with corresponding measurements of the overall functional characteristics of the prostheis.

Another project is an above-elbow prosthesis. The standard device utilizes a shoulder-actuated control cable for opening (or closing) the hand or hook and raising the forearm. Part of the available shoulder motion is used for each service; an additional cable operates an elbow lock by a shoulder shrug.

The newly developed A/E arm requires only one cable, and full shoulder motion can be used for both operating the elbow lock and raising the forearm. Shifting the control from one to the other is accomplished voluntarily by moving the shoulder in the opposite direction starting at the point of rest.

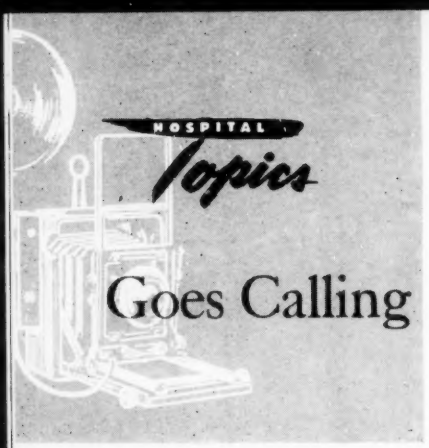
Going downstairs in the late afternoon, our male guide wondered aloud what might be going on behind one closed door of interest to a reporter. Since the response to his knock was in feminine voice, our guide retreated. In the room was a nurse and a woman in the late years of her life. There were fatigue lines about the patient's mouth, but her eyes were at peace. She had come into the institute two days before, one arm useless as the result of a stroke. Intermittently, during those two days, she had been instructed in, and doggedly practiced, dressing herself . . . something she had done without thought or effort for over 70 years.

She straightened the neckline of her dress with the arthritis-stiffened fingers of her good hand as she spoke; "You've no idea," she said, "how wonderful it is to be able to do these few simple things again, even though I don't do them very well yet. It makes you cherish the things you took for granted all your life."

We probably couldn't understand, completely, but in that last look at the Chicago Rehabilitation Institute, we felt we understood the meaning of "The end is the beginning" with a pristine clarity.

**Above is the "baby" of the institute, who is a quadriplegic as the result of a diving accident. She is shown in an electric wheelchair which she maneuvers by means of a button at her right hand. With very limited pressure, the button may be moved to propel the chair forward, backward, or to either side.**

**She is almost ready for discharge. Her father's lodge has arranged a benefit dance, the proceeds of which will be used to purchase a similar type chair for her to use when she goes home.**



HOSPITAL *Topics*

# Goes Calling

. . . on the Women and Children's Hospital, Baylor University Medical Center, Dallas, Texas

● Entering the lobby of the new $5,000,000 Women and Children's Hospital in Dallas, the visitor immediately gets the feeling that this is indeed a hospital planned to please the feminine taste. Eight columns of rose marble give an air of Southern graciousness. Rose marble is also used in the entrance foyer and the elevator front. Walls are finished in a three-dimensional, diamond-shape mosaic tile in soft pink and white.

The ceiling has a 30-foot circular "egg crate" light diffuser, so that the entire central area of the circular rotunda ceiling is illuminated.

Between the two bronze-mesh elevator doors is a small information desk, also of rose marble. Opposite the elevators is a waiting-room open to the lobby area. A floor-to-ceiling aluminum screen in anodized gold separates the lobby area from the gift shop.

"House phones" in the lobby offer direct-line service to a central information center, to enable visitors to obtain information on patients' room numbers.

Piped-in music plays softly in elevators, lobbies, and waiting-rooms throughout the hospital. It's also heard in labor rooms.

**John L. Towers, assistant administrator, points out features of Baylor bedside unit, which gives patient control of most important services at her fingertips.**

Everywhere in the building color is used appropriately. In patients' rooms in the maternity and gynecology divisions, pastels are used in yellow, tan, blue and pink – even for the bathtubs. The children's division features more vivid colors: the nurses' station is red, corridor floors are finished in red and white vinyl material called "Candy Cane," and the playroom is decorated in red, blue, yellow, and white.

Pleasant surroundings undoubtedly make hospitalization more pleasant for the patient and for the personnel who care for her. But besides attractive decor, the Women and Children's Hospital has incorporated several unusual features to improve patient care and enable employees to work more efficiently.

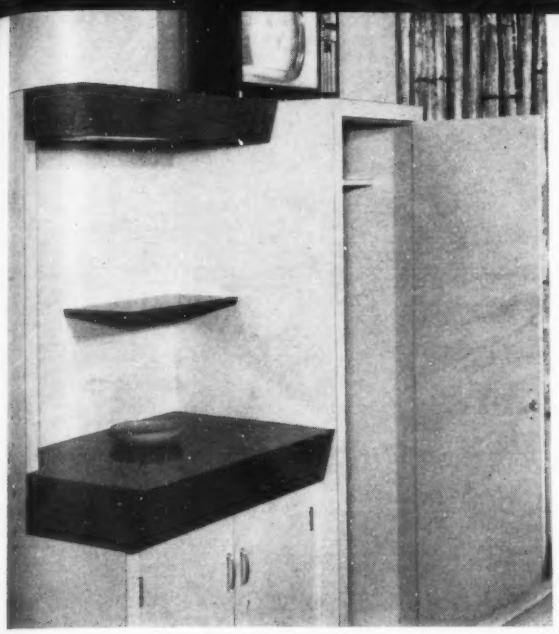
**IN PATIENTS' ROOMS:**

A bedside unit, built into every patient's room, puts within reach of the patient control of the most important services for her. Its service panel includes speaker and pushbutton controls for television stations, five radio channels, piped-in music, or the hospital chapel services; a two-way nurse's call system, a telephone, and a luminous-dial electric clock; switches for control of the overhead reading light and the dome light for illuminating the room for examinations and treatments; and an electrical outlet.

A lavatory is set in the top of the Formica unit, to make it more accessible for use by the doctor, nurse, and patient. There is a paper-towel dispenser above the lavatory. Also included in the unit are two drawers for storage of the patient's belongings, just below the control panel, and storage space below the lavatory for towels, wash cloths, perineal lights, bedpans, and other supplies kept in the patient's room.

There are four types of illumination in the room. In addition to the two lights mentioned above, there is a small night light under the bed with metal louvers pointing downward which provides just enough light for the nurse to observe the patient during the night hours without disturbing her. All of the night lights for an entire floor are operated from one switch located at the nursing station. A light for soft indirect illumination is controlled from a switch near the door.

Chilled drinking water is available from a separate



Built-in wardrobe unit provides additional storage space and shelf space.

faucet in each room. The decision to install the system for chilled water influenced the decision to include the lavatory in the bedside unit. Having chilled water on tap eliminates the need for water carafes and also for glasses, because there is a paper-cup dispenser which holds 100 disposable cups.

Installation of this system also eliminated the need for crushed-ice storage or ice-making machines on the nursing divisions. "Freeze-A-Bag" units are used when ice bags are needed. When crushed ice is desired, ice is obtained from the refrigeration unit at the nursing station and crushed with a small hand- or electrically-operated crusher.

A built-in wardrobe unit provides closet space, additional storage space, and shelves suitable for display of flowers or gifts. The television set, a thin-line model, is placed on top of the unit at a height of seven feet.

A principal reason for having both the bedside unit and the wardrobe unit built in, Mr. Powell points out, was that housekeeping in the rooms is made easier – there is less floor space to clean, and less furniture to be moved in order to clean.

Shower baths in the maternity section have a built-in ledge for sitting, and special hand rails for support if needed. Each bath on the maternity floors has built-in perineal sprays with special temperature regulators for the water.

**IN CARE OF TEENAGERS:**

The "12 to 20 Club" on the sixth floor provides 19 beds for adolescent patients. Baylor thus becomes one of the first hospitals in the country to establish a separate division for teenagers who are hospitalized.

A teenage patient advisory committee, consisting of former patients, ages 12-19, helped to suggest ideas for the unit. Its rooms all include television and a telephone for each bed (in the bedside unit). Popular music is available for the patients' listening pleasure, in addition to the semi-classical music on the Muzak channel.

Striped drapes in strong colors have been used in the rooms, and the chairs and other furnishings are also in bright colors, in keeping with preferences expressed by the teenage advisors. Their request for young nurses on the division has also been given consideration.

**IN NURSERIES:**

A new mixing system for the premature nurseries and the general nurseries combines oxygen with air at a central point to produce an exact concentration of 40 percent oxygen, which is distributed to the premature nurseries and to the general nurseries in a separate system of copper pipes. The system was developed by a local manufacturing firm, working with Baylor doctors, nurses, and mechanical engineers.

Previously, when 40 percent oxygen was needed, it was supplied through a manifold hook-up of tanks containing 40 percent oxygen and 60 percent nitrogen.

Each nursery (there are three general nurseries and one premature nursery) is also equipped with a centrally piped vacuum system, compressed air, and 100 percent oxygen with adapters and regulators immediately available for use.

A predominant color is used in each general nursery – one is pink, one blue, and one yellow. Scampering over the walls is "Growl Bear," a character created by Margot Austin in a children's book of the same name. The animal has been reproduced in caricature on laminated plastic, so that it can be easily cleaned without damage to design or colors.

**IN SERVICE FACILITIES:**

The building has been designed around a central core which contains the nursing stations, service and

(*Continued on next page*)

Administrator Boone Powell points out panel board in "Dad's Den" on which are mounted humorous sketches of the typical expectant father. In this comfortably furnished room, dads can relax, watch TV, chat, or pace the floor if they feel like it.

Pediatric playroom is bright and cheerful. At its entrance two life-sized toy soldiers stand guard atop two big bass drums. Floor has an inlaid design of children's games—a hopskotch pattern and a target. At left: two young patients feel energetic enough to try hopskotch. Above: Room also includes a four-foot aquarium. Other features are a reading alcove, a doll house, a music area, easels for drawing, and a multi-purpose sectional trapezoid table.



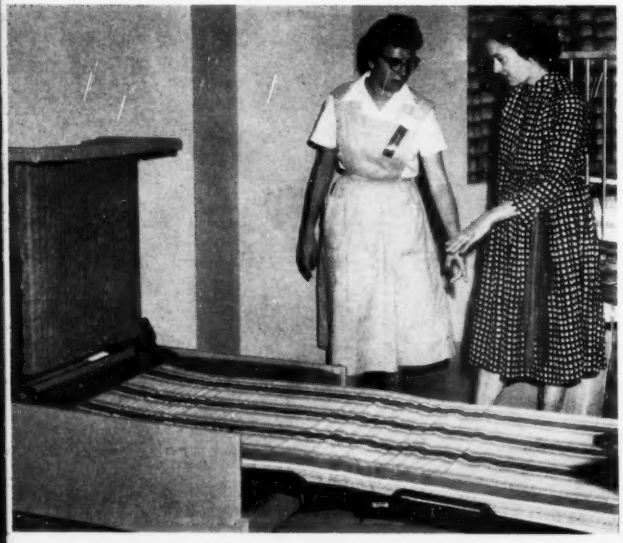
passenger elevators, serving kitchens, and other service facilities. A pneumatic-tube system, serving the entire medical center on a 24-hour basis, is used to transport drugs, patients' mail, and requisitions. A selective vertical package lift dispatches and automatically unloads at each nursing station, dressing trays, bandages, solutions, and sterile supplies. The automatic unloading feature eliminates tieup of lifts at stations until someone can unload them.

The Trayveyor system is used for transportation of food trays to floors.

A special feature of the nursing division – one requested by the nurses who helped plan the new hospital – will be individual small lockers for each employee, in which she may leave her purse and other personal belongings while she is on duty.

Nurses and other employees will have a special area adjacent to the hospital laundry where they may go to pick up clean uniforms. Uniforms will be stored on a special movable rack. The employee dispensing them will dial a number on an instrument at her work desk, to cause the movable rack to revolve until the laundry bundle desired is moved by a mechanical rack to the pick-up counter.

Specially designed bed-chair in pediatric patients' rooms provides a single bed for a parent who wants to stay overnight in the hospital. It's an attractive lounge chair by day. Here a junior volunteer shows how chair opens up to reveal comfortable foam-rubber mattress.



**IN APPROACH TO PLANNING:**

The seven-story hospital has 126 maternity beds, 150 bassinets, 60 beds for gynecology patients, 44 beds for children, and 19 beds for teenagers.

Planning for the hospital was really a cooperative effort. Planning committees worked closely with the architect and administration for many months. A room in the original Baylor building was set aside as the "planning room."

The major part of the planning was assigned to six committees, each comprised of doctors, nurses, a representative of the administration, and a staff representative of the architectural firm. Each committee was given one of the following patient-service areas to study: the premature nursery, the labor and delivery suite, the newborn nurseries, the formula preparation center, the children's division, and the gynecology and postpartum patient areas. Each committee met once a week for a two-hour session, which meant that the planning sessions were being conducted six days a week.

An agenda was prepared and mailed to committee members prior to each meeting, to give them an opportunity to think about the specific areas to be discussed. Every procedure involving patient care was discussed. Minutes were kept of each meeting.

As definite conclusions were reached, reports were submitted to a general committee, consisting of the chairman of the department of obstetrics and gynecology, the chairman of the department of pediatrics, and the chairmen of the six planning committees. This coordinating committee pulled together the thinking of all groups and was the final review authority, with the hospital administration, before conclusions were passed on to the architects.

*(Continued on page 37)*

# 8 second magic in I.V. set-ups with the Cutter Saftisystem "28"™†

**remove metal seal and disc**

**plug set into center of stopper with a quick thrust**

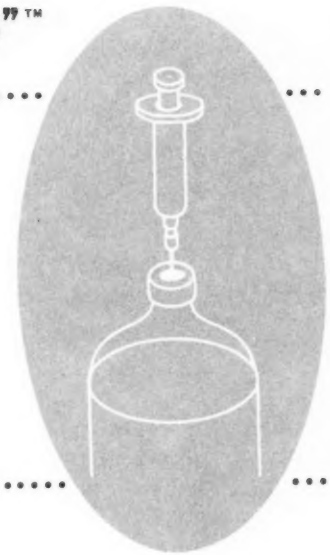
**quickly invert bottle to visually check for vacuum and to automatically establish fluid level in drip chamber; clear tubing of air and infuse**

†Patent Pending

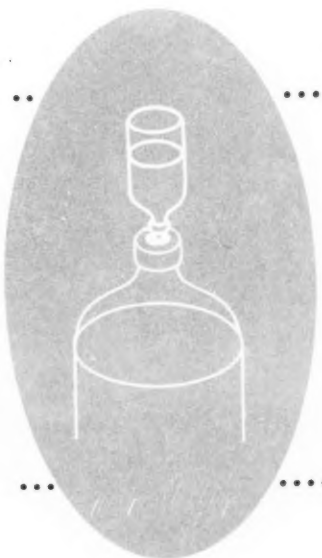
SINCE CUTTER 1897

## ADDING MEDICATION IS EASIER AND MORE CONVENIENT

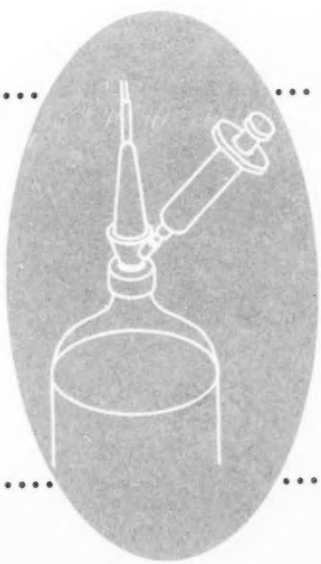
## SAFTIFLASK® "28"™



Add liquid medication with syringe.



Add liquid medication from a special additive vial with spike.



Add liquid medication by attaching syringe luer hub to air-inlet opening of Saftiset.

expose stopper plug in set invert bottle

# THE FIRST MAJOR ADVANCE IN SOLUTION SYSTEMS SINCE DISPOSABLE SETS

The Cutter Saftisystem "28" consists of a 28 mm. Saftiflask® and improved injection sets. A new air inlet with a filter does away with the air tube, permits use of a solid stopper with a single point of entry, and permits only filtered air to enter the flask.

The Saftisystem takes just 8 seconds to set up. There's no searching for the point of entry as there's only one place in the stopper where the set plugs in. The bottle, when inverted, automatically establishes a level in the drip chamber, and the incoming filtered air bubbling up gives a visual check for vacuum.

Medication can be added (aseptically) either before or after the flask has been suspended on the T stand, even after infusion is started.

Hospitals can convert to the Saftisystem "28" without confusion as it is compatible with all closed systems of I.V. administration.

**SEND FOR COMPLIMENTARY WALL CHART EXPLAINING THE SAFTISYSTEM "28" IN DETAIL.**

SINCE CUTTER 1897

**CUTTER LABORATORIES**
Berkeley, California

## SAFTISET "28"* USED WITH CHEXET-"Y"*

**FOR INTERMITTENT ADMINISTRATION OF AN ANESTHETIC WITH AN I.V. SOLUTION OR BLOOD**

1. Syringe is attached to a sterile connection

2. Check-valves prevent backflow and creeping syringe

3. Latex bulb can be squeezed for flashback at needle adapter and also used as an additional site for extra medication

4. Fluid level in drip chamber remains unchanged

## SAFETY WITH CHEXET-"Y"

- no leaky stopcocks
- no lost parts
- no backflow and creeping syringe plungers
- no sterilization problems

**One-hand operation—no stopcock valve to adjust**

*TM

**TOPICS GOES CALLING**

(*Continued from page* 34)

In all planning meetings each area was identified and analyzed so that the new facilities would permit the most efficient service possible. Extensive checklists outlining essential elements to be included in each room were prepared as a guide for the architect.

Following preparation of these lists, the committees concentrated on the development of operational plans and procedures. Of necessity, the preliminary planning meetings took into consideration the nursing procedures to be conducted in each area. It was also necessary to review plans for the new hospital and give careful consideration to procedures which had traditionally been used throughout the medical center, to determine whether they were applicable for use in the new hospital. Some procedures were accepted; others were discarded or revised, and some entirely new procedures were developed.

The committee studying the premature nursery, for example, first developed a list of all functions essential to the care of the premature baby. The architect made tentative layouts of the premature nursery, work areas, and scrub rooms, including the location of shelves, examining tables, special equipment, and so forth. Consideration was also given to the observation area for parents and relatives.

Special attention was given to the location and arrangement of facilities needed to carry out proper

(*Continued on next page*)

**At right: Sign at entrance to unit for adolescent patients. Below: Teenage patients like opportunity to mix with other patients their age.**

**ACME** *brings smart styling to O. R. Caps*

**5 designer styles to choose from!**

ACME's O. R. caps are designer styled, comfortable as well as functional. Made of a fine, lightweight muslin, they fit without disturbing your hairdo and prevent loose hair from falling. Five attractive styles to choose from, with gussets and adjustable tie tapes or in the smart drawstring style. All ACME caps are preshrunk to withstand repeated launderings. Colors: White, Jade Green, Misty Green.

SURGEONS' ROUND TOP

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WRITE TODAY for completely illustrated price list including nurses' and surgeons' caps, plus approved face masks.

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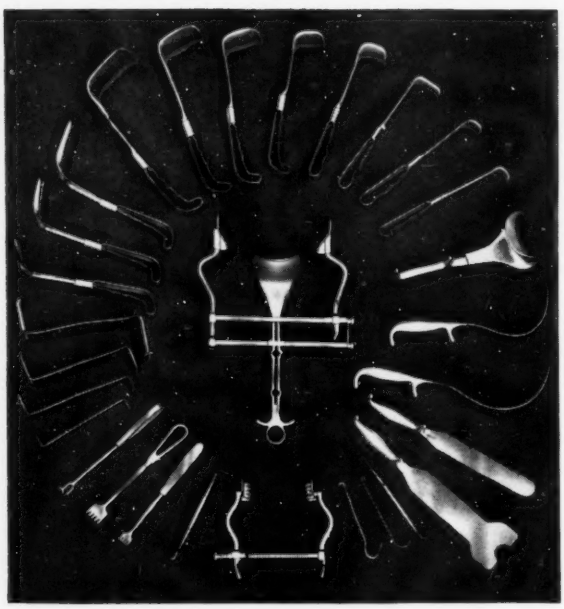
# *New*
## "SOFT-SHEEN" FINISH
# RETRACTORS



## *A Complete Non-Glare Finish*

SOFT-SHEEN is a new finish for stainless steel, devised to give outside retractor surfaces a soft, non-glare finish—to absorb rather than to reflect operating room light, protecting the surgeon's eyes.

A highly polished finish is retained on the inside for an ultra-smooth non-traumatic surface.

These beautiful stainless steel retractors with the new SOFT-SHEEN finish are good examples of Dittmar-Penn's continual research and development program to further improve the excellence of their complete line of quality surgical instruments.

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MANUFACTURERS AND WHOLESALERS

Mrs. Annie Louise Ramsey, R.N., director of nursing service, shows how to adjust light over bed in labor room. One wall of each labor room features an "out-in-the-garden" scene. Patients like the feeling of being outdoors which the design gives them. Rooms are light and airy, and patients don't feel closed in.

**TOPICS GOES CALLING continued**

technic. During the planning period, the architect and members of the committee visited other hospitals where outstanding facilities had been developed. Wherever possible, the best features of these existing nurseries were incorporated into the plans.

It was decided by the doctor-nurse committee that the premature nursery should consist of three separate nursery rooms, with a common work room, examining room, and nurses' station. The nurses' station is centrally located, with the three separate rooms extending out in fan-like fashion, with glass partitions, thus enabling the nurses to have a good view of each baby.

After the planning sessions, members of the committee had meetings to review all nursing procedures having to do with the premature infant. Special classes were then held for personnel scheduled to work in this area, using the newly developed procedure manual.

Planning committees for the other special areas operated in much the same way.

Three additional committees were established to get the patients' viewpoints: a committee of mothers who had been patients at Baylor's Florence Nightingale Hospital, a "fathers' committee" (one thing the fathers asked for was "plenty of phones and plenty of dimes" to spread the news of baby's birth), and the teenage committee to help plan the wing for teenage patients. One of that committee's first requests was to drop the term "teenage" because they felt that in the minds of some people it was synonymous with the term "delinquent." They suggested the name which was adopted: "12 to 20 Club."

All committee members worked tirelessly and enthusiastically and recognized their responsibility in determining the standard of patient care.

Baylor officials are well satisfied with the results of this approach to planning, and—with pardonable Texas pride—believe it is the most comprehensive method heretofore used by any hospital.

# NOW! Fast, positive sterilization at the touch of a button . . . with Castle ORTHOMATIC Sterilizers!

**TEMPERATURE SELECTOR**
For the first time, you can DIAL the exact temperature required for every load. Unit charts entire cycle . . . proof of sterilization.

**CONVENIENT CONTROLS**
All controls and indicators are grouped up top . . . easy to set and see.

**GOOD LOOKS**
ORTHOMATIC'S fresh new square-line look is inspired by the finest in contemporary styling.

*Never has hospital sterilization been easier!* Just press the button . . . ORTHOMATIC does the rest!

*Never has hospital sterilization been faster!* (1) Orthomatic *High Speed Heating* raises load to full sterilizing temperature in less than half the time of conventional sterilizers; (2) Orthomatic *Refrigerant Cooling* cools liquids two to four times faster; (3) Orthomatic *Sterile-Filter Vacuum Drying* speeds dry goods processing. Now, sterilization three ways faster!

Most important . . . *never has hospital sterilization been safer!* That's because Orthomatic Delayed Signal Sensing System assures full cycle timing at full temperature, regardless of load size. All possibility of premature timing is avoided.

Castle ORTHOMATIC is the simplest, safest, most versatile sterilizing system ever developed. We think you'll agree!

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Please send full details on the all-new Castle ORTHOMATIC Sterilizer.

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# Planning and Equipping An Administrative Department for 50-, 100- and 200-Bed General Hospitals *

Part III

## CHECK LIST FOR PLANNING THE HOSPITAL ADMINISTRATION DEPARTMENT

The following questions will serve as a check list for evaluating the planning program of the individual hospital. Affirmative answers to the questions indicate good planning. Suggested solutions are contained in the foregoing sections.

**Admission**

Questions that may be asked to determine adequacy.

I. *Space*

A. How many persons are needed to staff the office?

B. Is there space for equipment that is needed to adequately perform the function of the office?

C. Is storage space provided for forms, etc.?

D. Is a costumer or closet space provided?

E. Is a patient imprint plate machine indicated? If yes, has space been provided?

F. Is space provided for a wheelchair?

G. Does the hospital anticipate combining the responsibilities of the admitting section with other departments? If so, are the offices in proximity?

H. Is there provision for expansion?

I. Is privacy provided for interviewing patients?

II. *Physical Facilities*

A. Is lighting and ventilation adequate to serve the area?

B. Is the office pleasant in appearance?

C. Does the office need the use of a pneumatic tube system to distribute copies of notification of admission to the various departments? If not, what type of distribution system will be used?

D. Is the office equipped with an imprint plate machine? If yes, will the office imprint all records before delivery to the floor?

E. Is the office equipped to adequately perform the function set forth by hospital policy?

F. Is the office provided with an electric clock?

G. Is the office provided with an electric typewriter? If yes, is there an electric outlet in a space that will not be hazardous when the typewriter is connected?

H. Are there enough electric outlets?

III. *Operation*

A. Is the office equipped with a typewriter that is capable of typing the number of multiple forms needed with one typing?

B. Does the hospital policy anticipate using escort service to the nursing unit? If yes, will admitting office personnel be used?

C. Will the admitting personnel receive and distribute the incoming mail to the patients?

D. Will the admitting office be responsible for deposits from incoming patients?

E. Will the admitting office be responsible for visitor control?

F. Will the admitting office be responsible for receiving and distributing incoming items for the patients?

G. Will the admitting office be responsible for notifying relatives of change in the patient's condition?

H. Will the admitting office be responsible for notifying third-party payees upon admission of the patient?

I. Shall it be the responsibility of the admitting office to assemble the initial set of hospital forms for the nursing unit?

J. Will the office maintain discharge and admission cards? If yes, has storage space been provided?

K. Will the unit be required to maintain a doctor's rotating registry for emergency? Admission registry? Birth registry? Death registry? Undertaker's registry? Reservation registry? Valuables receipt book?

L. Will the office provide patient's library service? If yes, have bookcases and a bookcart been provided for the service?

**Business Office**

I. *Space*

A. How many persons are needed to staff the office?

*Prepared by Alex M. Milne, Chief, Equipment Planning Branch and James G. Williams, Hospital Administrator, Division of Hospital and Medical Facilities, Public Health Service, Department of Health, Education and Welfare, Washington, D. C. Mr. Williams is now Administrator, Tift County Hospital, Tifton, Georgia.

How many persons will be on duty during peak load?

B. Will one office be sufficient for the function or should it be divided into sections? If separate sections are indicated how many are needed and what will be the function of each?

C. What provision is made for valuable documents? Patient's valuables? Hospital receipts?

D. Where will patient's accounts be paid? What equipment and space will be needed for the cashier's station?

E. What major items of movable equipment are needed?

F. What built-in equipment is needed?

II. *Function*

A. What method shall be used for delivery of patient's charges to the business office? Messenger? Intercommunication? Pneumatic tube?

B. What method shall be used for posting accounts? Manual? Machine?

C. Is the payee afforded privacy and comfortable waiting space at the cashier's station?

D. Shall remittances be receipted manually or by machine?

E. Is enough space provided for personnel and equipment for efficient working conditions?

F. Has adequate equipment been provided to fulfill the functions of the office?

G. Is sufficient lighting, ventilation, and appropriate communication provided?

H. Is the credit manager near and readily accessible to the accounts receivable and admissions sections?

I. Have personnel and equipment been provided for statistical information?

J. Will information and telephone service be a combined service completely or for only certain hours? If separate service is to be provided, have provisions been made to accommodate each service?

K. Have provisions been made for mail handling, flowers, and receipt of articles for patients?

L. Have services been related so that supervision may be maintained?

M. Is the office sectionalized to offer maximum efficiency in organization and working conditions?

**Social Service**

I. *Space*

A. How many social service workers will be needed for the hospital?

B. How many private offices will be needed for the staff?

C. Where shall the department be located?

D. What major pieces of movable equipment are necessary for the department?

E. What built-in equipment is needed?

II. *Function*

A. Will the hospital require social investigation on each patient?

B. How will the hospital utilize other social agencies?

C. Will the hospital have any educational program? Training program for social workers?

**Medical Records**

I. *Space*

A. How many persons are needed to staff the office during peak load?

B. What type of filing equipment will be used?

C. How many records will be kept in active storage? Will inactive record storage space be provided? For how many records?

D. Will central dictation be installed or will individual machines be used?

E. Will a dictation and review room be needed for physicians?

F. Is microfilming contemplated? What space is needed for the equipment and the records to be processed?

G. What major items of movable equipment are needed?

H. What built-in equipment will be required?

II. *Function*

A. Will personnel from the office be used for other than medical records work? If yes, what other duties will be assigned?

B. How will records be transported to and from the Outpatient Department? Nurse's Station? etc.?

C. Will the doctors dictate from locations other than the Medical Records Room?

D. To whom will the Medical Records Librarian be responsible?

E. What training programs will the hospital have?

**General Considerations**

A. What will the staffing pattern for the Administrative Department be?

B. Will the Purchasing Department be in the Administrative Suite or adjoining the Storeroom?

C. Where will the Administration Department be located with relation to:

1. Emergency Department
2. Main Entrance
3. Nursing Department
4. Outpatient Department

D. Will nursing office be located in the Administrative Suite?

*(Continued on next page)*

**ADMINISTRATION continued**

E. What other facilities are required?

| | Location |
|---|---|
| Chapel | |
| Conference Rooms | |
| Doctor's Library | |
| Gift Shop | |
| Nurse's Library | |
| Patient's Library | |
| Snack Bar | |
| Other | |

F. Who will require private offices and where will they be located?

G. Will waiting areas be required in the Secretary's Office?

H. How much space is required for the Administrative Officer equipment-wise?

I. What offices will require private toilet facilities? Lavatories? Drinking fountains?

## SUGGESTED EQUIPMENT LIST FOR THE ADMINISTRATION DEPARTMENT

| | Suggested Quantity 50 Bed | 100 Bed | 200 Bed |
|---|---|---|---|
| **Admitting Office** | 1 | 1 | 2 |
| *Group I Equipment* | | | |
| Blinds, window | | | |
| Clock outlet and electric clock | 1 | 1 | 2 |
| Outlet, electric, floor | 1 | 2 | 2 |
| *Group II Equipment* | | | |
| Cabinet, filing, letter size, 4 drawers, top 2 drawers for 5 x 8 inch card size trays | 1 | 1 | 2 |
| Chair, posture | 1 | 1 | 2 |
| Chair, office, with arms, seat and back cushions | 2 | 2 | 4 |
| Chair, wheel, folding type | 1 | 1 | 2 |
| Desk, office, double pedestal | 1 | 1 | 2 |
| Index, 5 x 8 inches, visible | 1 | 1 | 2 |
| Lamp, desk | | | |
| Table, office, 34 x 60 inches | 1 | 1 | 2 |
| Typewriter, electric | 1 | 1 | 2 |
| **Equipment Alcove** | 1 | 1 | — |
| *Group I Equipment* | --- | --- | --- |
| *Group II Equipment* | | | |
| Duplicating equipment | 1 | 1 | — |
| Imprint equipment | — | 1 | — |
| **Admission Waiting Room** | — | 1 | 1 |
| *Group I Equipment* | | | |
| Clock outlet and electric clock | — | 1 | 1 |
| *Group II Equipment* | | | |
| Chair, office with arms, seat and back cushions | — | 3 | 4 |
| Settee, two passenger | — | — | 2 |
| Table, office | — | 1 | 1 |
| **Imprint Equipment Room** | — | — | 1 |
| *Group I Equipment* | --- | --- | --- |
| *Group II Equipment* | | | |
| Duplicating equipment | — | — | 1 |
| Imprint equipment | — | — | 1 |
| Table, office | — | — | 1 |
| *Group III Equipment* | | | |
| Numbering machine | 1 | 1 | 1 |
| Waste paper receptacles | 1 | 1 | 2 |
| *Supplies* | | | |
| Admission book[1] | | | |
| Doctor's call registry book | | | |
| Reservation book | | | |
| Undertaker's receipt book | | | |
| Valuables receipt book | | | |
| **Medical Records** | 1 | 1 | 1 |
| *Group I Equipment* | --- | --- | --- |
| *Group II Equipment* | | | |
| Cabinet, filing, card size, 3 x 5 inches, 2 drawer | 5 | 10 | 20 |
| Cabinet, filing, card size, 5 x 8 inches, 2 drawer | 5 | 10 | 20 |
| Cabinet, filing, open shelf, 8 shelf | 4 | 9 | 16 |
| Cabinet, visible card index, 5 x 8 inches, 13 drawer | 1 | 1 | 2 |
| Chair, office, straight | 2 | 2 | 4 |
| Chair, posture | 1 | 1 | 4 |
| Desk, office, double pedestal | --- | 1 | 1 |
| Desk, typist | 1 | 1 | 2 |
| Dictating machine[1] | 1 | — | — |
| Dictating transcriber machine[1] | 1 | 1 | 2 |
| Lamp, desk | | | |
| Stand, cabinet, filing, card size, "x" card, 2 drawer | 1 | 2 | 4 |
| Stand, cabinet, filing, card size, "x" card, 2 drawer | 1 | 2 | 4 |
| Stand, typewriter | 1 | 1 | 1 |
| Table, office, 34 x 60 inches | 1 | 1 | 2 |
| Typewriter, 18 inch carriage | 1 | 1 | 1 |
| Typewriter, standard | 1 | 1 | 4 |
| **Physicians' Dictating Office** | — | 1 | 1 |
| *Group I Equipment* | --- | --- | --- |
| *Group II Equipment* | | | |
| Chair, office, straight | — | 2 | 4 |
| Dictating machine[1] | — | 2 | 2 |
| Table, office, 34 x 60 inches | — | 1 | 1 |
| **Central Storerooms** | | | |
| *Record Storage Room* | 1 | 1 | 1 |
| *Group I Equipment* | --- | --- | --- |
| *Group II Equipment* | | | |
| Cabinet, filing, open shelf, 12 shelf[2] | 11 | 22 | 30 |
| Ladder, step | 1 | 1 | 1 |
| Table, work, 30 x 60 inches | 1 | 1 | 1 |
| **Information and Mail Receiving Station** | — | 1 | 1 |
| *Group I Equipment* | -- | --- | --- |

[1]Or typed daily list.

[1]Telephone dictating system also available.
[2]Allow space for this number but may be purchased as needed.

| | Suggested Quantity 50 Bed | 100 Bed | 200 Bed |
|---|---|---|---|
| *Group II Equipment* | | | |
| Chair, posture | — | 1 | 1 |
| Desk, office, single pedestal | — | 1 | 1 |
| Index, bed, section | — | 1 | 1 |
| Rack, wrapping paper, with cutter, 24 inches | — | 1 | 1 |
| Sorting file | — | 1 | 1 |
| Time stamp machine | — | 1 | 1 |
| **Telephone Office** | — | 1 | 1 |
| *Group I Equipment* | | | |
| Counter, 48 inches high, open below | — | 1 | 1 |
| Doctor's in and out register | — | 1 | 1 |
| Doctor's paging system-selector keyboard | — | 1 | 1 |
| Microphone for calls | — | 1 | 1 |
| Telephone switchboard | — | 1 | 1 |
| *Group II Equipment* | | | |
| Chair, posture | — | 1 | 1 |
| Index, bed, sectional | — | 1 | 1 |
| **Social Service Office** | — | — | 2 |
| *Group I Equipment* | | | |
| Blinds, window | | | |
| Clock outlet and electric clock | — | — | 2 |
| *Group II Equipment* | | | |
| Cabinet, filing, letter size, 5 drawer | — | — | 4 |
| Chair, office, arm | — | — | 6 |
| Chair, office, straight | — | — | 4 |
| Chair, office, swivel with arms | — | — | 2 |
| Chair, posture | — | — | 1 |
| Desk, office, double pedestal | — | — | 2 |
| Lamp, desk | | | |
| Table, office, 34 x 60 inches | — | — | 1 |
| Typewriter, standard | — | — | 1 |
| **Social Service Waiting Room** | — | — | 1 |
| *Group I Equipment* | | | |
| Clock outlet and electric clock | | | |
| *Group II Equipment* | | | |
| Cabinet, filing, letter size, 5 drawer | — | — | 4 |
| Chair, office, straight | — | — | 4 |
| Chair, posture | — | — | 1 |
| Desk, typist | — | — | 1 |
| Lamp, desk | | | |
| Table, office | — | — | 1 |
| Typewriter, electric | — | — | 1 |
| **Administrator's Office**[1] | 1 | 2 | 2 |
| *Group I Equipment* | | | |
| Blinds, window | | | |
| Clock outlet and electric clock | 1 | 2 | 2 |
| Inter-communication, master station | | | |
| *Group II Equipment* | | | |
| Bookcase | 1 | 2 | 2 |
| Chair, office, arm | 5 | 5 | 5 |
| Chair, office, swivel with arms | 1 | 2 | 2 |
| Costumer | 1 | 1 | 2 |
| Desk, office, double pedestal | 1 | 2 | 2 |
| Dictating machine | 1 | 2 | 2 |
| Lamp, desk | | | |
| Stand, ash | 1 | 2 | 2 |
| Table, office, 34 x 60 inches | 1 | 1 | 1 |
| **Secretary's Office** | 1 | 1 | 3 |
| *Group I Equipment* | | | |
| Blinds, window | | | |
| Clock outlet and electric clock | 1 | 1 | 3 |
| *Group II Equipment* | | | |
| Cabinet, filing, letter size, 5 drawer | 1 | 2 | 6 |
| Chair, office, straight | 2 | 2 | 6 |
| Chair, posture | 1 | 1 | 3 |
| Desk, typist's | 1 | 1 | 3 |
| Dictating transcriber machine | 1 | 1 | 1 |
| Lamp, desk | | | |
| Time stamp machine | 1 | — | — |
| Typewriter, standard | 1 | 1 | 3 |
| **Purchasing Agent's Office** | — | — | 1 |
| *Group I Equipment* | | | |
| Blinds, window | | | |
| Clock outlet and electric clock | — | — | 1 |
| *Group II Equipment* | | | |
| Bookcase | — | — | 1 |
| Chair, office, arm | — | — | 2 |
| Chair, office, swivel with arms | — | — | 1 |
| Costumer | — | — | 1 |
| Desk, office, double pedestal | — | — | 1 |
| Dictating machine | — | — | 1 |
| Lamp, desk | | | |
| Stand, ash | — | — | 1 |
| Table, office, 34 x 60 inches | — | — | 1 |
| **Administrative Conference Room** | — | 1 | 1 |
| *Group I Equipment* | | | |
| Blinds, window | | | |
| Clock outlet and electric clock | — | 1 | 1 |
| *Group II Equipment* | | | |
| Chair, office, arm | — | 10 | 10 |
| Table, conference, 36 x 96 inches | — | 1 | 1 |
| **Director of Nursing Office**[2] | 1 | 1 | 2 |
| *Group I Equipment* | | | |
| Blinds, window | | | |
| Clock outlet and electric clock | 1 | 1 | 2 |
| *Group II Equipment* | | | |
| Bookcase | 1 | 1 | 2 |
| Cabinet, filing, letter size, 5 drawer | 1 | 2 | 4 |
| Chair, office, straight | 2 | 2 | 5 |
| Chair, office, swivel with arms | 1 | 1 | 2 |
| Costumer | 1 | 1 | 2 |
| Desk, office, double pedestal | 1 | 1 | 2 |
| Lamp, desk | | | |
| Table, office, 34 x 60 inches | 1 | 1 | 1 |
| **Business Office** | 1 | — | — |
| *Group I Equipment* | | | |
| Blinds, window | | | |
| Clock outlet and master clock | 1 | — | — |
| Doctor's in and out register | 1 | — | — |
| Doctor's paging system-selector keyboard | 1 | — | — |
| Fire alarm gong | 1 | — | — |

*(Continued on the next page)*

[1] Separate offices for the Administrator and Assistant Administrator.

[2] The 200 bed hospital provides separate offices for the Director of Nursing and the Assistant Director of Nursing.

| | Suggested Quantity 50 Bed | 100 Bed | 200 Bed |
|---|---|---|---|
| Microphone for calls | 1 | — | — |
| Outlet, electrical | | | |
| Pneumatic tube receiving station[1] | — | — | — |
| Telephone switchboard | 1 | — | — |
| Vault | 1 | — | — |
| *Group II Equipment* | | | |
| Adding machine, 8 bank | 1 | — | — |
| Calculating machine | 1 | — | — |
| Cabinet, filing, ledger size, 4 drawer | 2 | — | — |
| Cabinet, filing, legal size, 4 drawer | 1 | — | — |
| Cabinet, filing, letter size, 5 drawer | 3 | — | — |
| Chair, office, swivel with arms | 1 | — | — |
| Chair, posture | 2 | — | — |
| Desk, office, double pedestal | 1 | — | — |
| Desk, typist | 1 | — | — |
| Duplicator with stand | 1 | — | — |
| Index, bed, sectional | 1 | — | — |
| Lamp, desk | | | |
| Ledger trays, (tub file) | 2 | — | — |
| Posting and billing machine | 1 | — | — |
| Rack, wrapping paper, with cutter, 24 inches | 1 | — | — |
| Table, office, 34 x 60 inches | 1 | — | — |
| Typewriter, standard | 2 | — | — |
| **Controller's Office** | — | — | 1 |
| *Group I Equipment* | | | |
| Blinds, window | | | |
| Clock outlet and electric clock | — | — | 1 |
| *Group II Equipment* | | | |
| Bookcase | — | — | 1 |
| Calculating machine | — | — | 1 |
| Chair, office, straight | — | — | 2 |
| Chair, office, swivel with arms | — | — | 1 |
| Desk, office, double pedestal | — | — | 1 |
| Lamp, desk | | | |
| **Posting and Billing Office** | — | 1 | 1 |
| *Group I Equipment* | | | |
| Blinds, window | | | |
| Clock outlet and electric clock | — | 1 | 1 |
| Pneumatic tube station | — | 1 | 1 |
| Vault | — | 1 | 1 |
| *Group II Equipment* | | | |
| Adding machine, 9 or 10 bank | — | 1 | 1 |
| Cabinet, filing, ledger, 4 drawer | — | 2 | 4 |
| Cabinet, filing, letter size, 5 drawer | — | 1 | 2 |
| Chair, posture | — | 1 | 3 |
| Desk, typist | — | 3 | 4 |
| Files, tub | — | 2 | 4 |
| Index, bed, sectional | — | 1 | — |
| Lamp, desk | | | |
| Postage meter machine | — | 1 | 1 |
| Posting and billing machine | — | 1 | 2 |
| Remittance control machine | — | 1 | 1 |
| Table, office, 34 x 60 inches | — | 1 | 1 |
| Typewriter, standard | — | 2 | 3 |

[1]May be a consideration for future expansion.

| | Suggested Quantity 50 Bed | 100 Bed | 200 Bed |
|---|---|---|---|
| **Accounting Office** | — | 1 | 1 |
| *Group I Equipment* | | | |
| Blinds, window | | | |
| Clock outlet and master clock | — | 1 | 1 |
| Doctor's in and out register | — | 1 | 1 |
| Doctor's paging system | — | 1 | 1 |
| Fire alarm gong | — | 1 | 1 |
| Information counter | — | 1 | 1 |
| Microphone for calls | — | 1 | 1 |
| Outlet, electrical | | | |
| Telephone switchboard | — | 1 | 1 |
| *Group II Equipment* | | | |
| Adding machine, 9 or 10 bank | — | 1 | 2 |
| Calculating machine | — | 1 | 2 |
| Cabinet, filing, legal size, 4 drawer | — | 1 | 2 |
| Cabinet, filing, letter size, 5 drawer | — | 2 | 4 |
| Chair, office, straight | — | 1 | 2 |
| Chair, office, swivel with arms | — | 1 | 1 |
| Chair, posture | — | 2 | 4 |
| Checkwriter | — | 1 | 1 |
| Desk, office, double pedestal | — | 1 | 1 |
| Desk, typist | — | 2 | 4 |
| Lamp, desk | | | |
| Table, office, 34 x 60 inches | — | 1 | 1 |
| Typewriter, 18 inch carriage | — | 1 | 1 |
| Typewriter, standard | — | 1 | 2 |

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4. Block, L., Dr. P. H., Prototype Study—100 Bed Hospital, *Modern Hosp.* 92:3 (March) 1959.
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HOSPITAL Topics

# PERSONALITY OF THE MONTH

ENTHUSIASTIC, vigorous, genial — all of these adjectives describe Boone Powell, administrator, Baylor University Medical Center, Dallas, Tex. But, more important, he is a keen administrator who constantly seeks the advice of others in his never-ceasing effort to improve patient care.

The new Women and Children's Hospital at Baylor was planned with the aid of planning committees composed of doctors, nurses, and members of the administrative staff, who worked closely with the architect for many months. Ideas also were solicited from former patients.

Mr. Powell has many ideas of his own, and then he seeks the right persons to carry them out. Two examples of improvements resulting from his suggestions are the Baylor bedside unit and the "Dad's Den" in the Women and Children's Hospital (see story beginning on page 32).

Administrator Powell wanted to make it more convenient for the patient to reach the most important services. The result is the Baylor bedside unit, which is built into every patient room. It incorporates on its control panel a telephone, controls and speaker for nurse's call system and TV, radio, and Muzak, switches for reading and examination lights, a clock, an electrical outlet.

Another feature which Mr. Powell thought essential was a haven for expectant fathers — not just a small lounge area designated as the "father's room," but a real refuge. To find out how to make this room as pleasing as possible, he asked the advice of men who had paced the floor at Baylor awaiting an infant's arrival.

With their help was developed the "Dad's Den," a tastefully decorated and furnished room with piped-in music and comfortable chairs in which dads can read, watch television, converse, or just relax. The room has its own adjoining bathroom. Dads can spend hours in the den, comfortably isolated from the rest of the hospital.

Since Mr. Powell became administrator of the Baylor University Medical Center in 1948, cost of new construction and modernization has come to $13,000,000. (The Women and Children's Hospital, which opened in October, cost $4,500,000.) To make way for the expansion and remodeling, 39 buildings on the "campus" or its fringes have been demolished. Mr. Powell says jokingly that he may not be remembered as a builder, "but I'll go down in Baylor medical history as its most famous wrecker."

Actually, he is quite pleased that the Baylor building program has stimulated widespread improvement and much construction in the surrounding area — a once-proud neighborhood which had become shabby.

Total net value of the assets of the expanding Baylor Medical Center is now over $18,000,000. Baylor ranked fourth in admissions for all voluntary nonprofit hospitals in the nation in the year ending September 30, 1958.

Over 1,400 persons are now employed, and an increase of about 400 is expected during the year. With the employees, and also with some 450 doctors on the staff, the board of trustees, and about 38,000 patients annually, Mr. Powell gets along very well.

He's an early riser and starts his busy day by 6 or 7 in the morning. He's very proud of his institution and obviously enjoys giving visitors a personally conducted tour when his schedule permits.

Mr. Powell got into administration through experience rather than through formal training in management. Born in Etowah, Tennessee, he attended the University of Tennessee and majored in chemistry and bacteriology. During summer vacations, he was a camp director. After graduation, he was employed as manager of public services, Tennessee Valley Authority, Norris, Tenn.

He later joined the Federal Works Agency as assistant to the chief of war-housing management, in Washington, D. C., and then was transferred to Fort Worth, Tex., as the agency's administrative officer for a five-state region. He went to Baylor in 1945, as assistant administrator and business manager, and became administrator in 1948.

Mr. Powell is a professor of hospital administration in Baylor University's graduate school, and holds an honorary doctorate of laws from the university.

He is a past president of the Dallas Hospital Council, the Texas Hospital Association, the Southwide Baptist Hospital Association, and the Texas Association of Hospital Accountants. At present he is a regent of the American College of Hospital Administrators and chairman, Council on Association Services, American Hospital Association. He is a hospital consultant to the surgeon general of the Army.

Mrs. Powell is a former nurse. This fact helps to explain her husband's comment in a recent newspaper interview: "The most beautiful dress ever designed is a nurse's white uniform."

The eldest of their three children—Boone, Jr.—is in the graduate school of hospital administration at the University of California in Berkeley.

Mr. Powell's favorite outside interest is Boy Scouting. An Eagle Scout, he will receive a pin this year for 35 years of continuous Scout service.

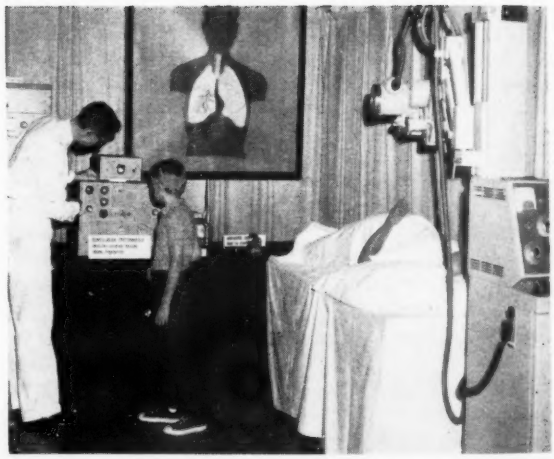
**Above: Children and teenagers were especially interested in the display on admitting procedures, and crowded around operator who was making sample Address-O-Graph plates. Right: At laboratory exhibit, technologist showed visitors how to examine slides through a microscope.**

# *Health Fair Gives Dallas Hospitals A Chance to Tell Their Story*

Dallas hospitals made good use of an excellent opportunity to tell the public about hospitals during the recent Dallas Health Fair, a week-long showing of more than 100 health exhibits at the Dallas Memorial Auditorium. The fair, co-sponsored by the Dallas County Medical Society and the American Medical Association, was held in conjunction with the AMA clinical meeting.

Hospitals in the Dallas Hospital Council cooperated in preparing nearly 30 exhibits which gave the public a glimpse into the complexities of modern hospital operation and at the same time presented information on careers in hospital departments.

All hospital exhibits were in one section called the "Hospital Corridor," which had only one entrance and one exit, so that anyone entering had to walk past all the exhibits or go back to the entrance to get out. An estimated 110,000 persons walked through the corridor.



**Above: A potential radiologist or technician learns about use of the scintillation spectrometer and other equipment found in the radiology department.**

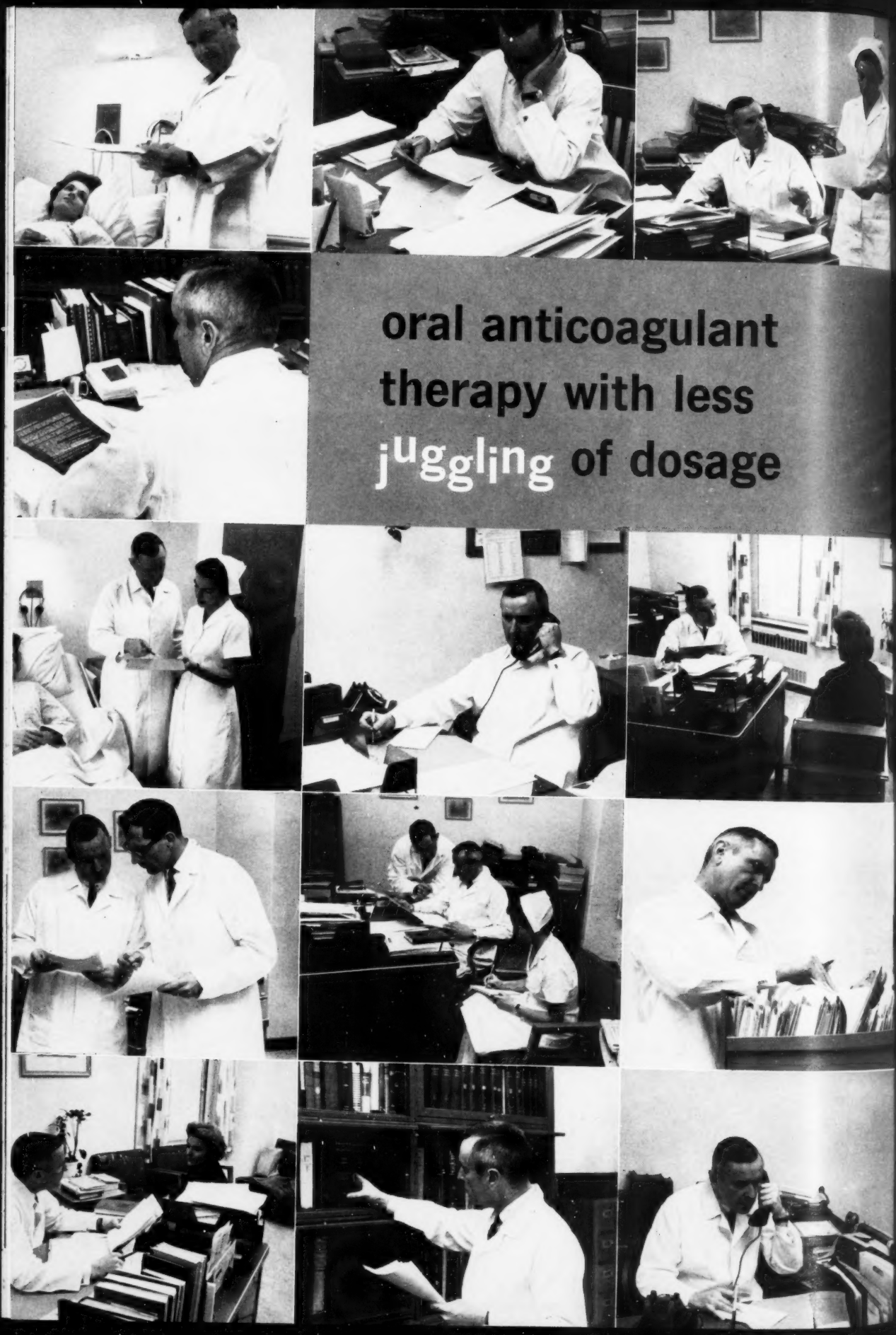
**Far left: Attractive display explained some of the activities of the hospital chaplain. Left: Contrast between today's hospital and that of 60 years ago was brought out by inclusion of a typical hospital room of 1900, visited here by Chesley M. Martin, M.D., Elgin, Okla., AMA "GP of the year," and Marilyn Turner, Miss Texas of 1959.**

Left: Equipment used in physical medicine and rehabilitation. Center: Role of the dietitian in patient care was depicted in this exhibit. Right: Care of infants—both fullterm and premature—was subject of this exhibit. In background are incubator and formula sterilizer.

Display which attracted most attention was that of an operating room set up for open-heart surgery, showing the team members and equipment required for this procedure.

Next to operating-room exhibit was this one on the postoperative recovery room, explaining that patient after surgery is closely observed in this area until he is considered sufficiently recovered to go to his room.

Among features of exhibit of typical patient's room were electrically-controlled bed and the bedside unit developed at Baylor University Medical Center, Dallas (see story on page 32). Display at right describes role of hospital auxiliary members and volunteers.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# Review of Hospital Lawsuits

By Leo T. Parker
Attorney at Law

## • Charitable Hospital Not Immune

• Recently, I received an interesting letter from an official of a large hospital corporation, in part, as follows: "I have read your writings for many years and certainly I and members of our hospital's staff have profited by being able in many instances to anticipate our legal responsibilities and therefore prepare to avoid our future liabilities. Now, however, a new legal situation has arisen. It concerns the present liability of a charitable hospital for injuries to patients, particularly under the law relating to 'administrative' and 'medical.' I presume that you, an experienced reader and writer of law suits involving hospital corporations, understand these legal classifications."

A review of late and leading higher court decisions discloses that the doctrine declaring charitable institutions immune from liability was first declared in this county in 1876. See McDonald v. Massachusetts General Hospital, 120 Mass. 432. This court held that a charity patient, negligently operated upon by a doctor, could not hold the hospital responsible. This court reasoned that the public and private donations that supported the charitable hospital constituted a trust fund which could not be diverted.

As sole authority for its conclusion, this court relied on an English case (Holliday v. St. Leonard's, 11 C.B.N.S. 192, 142 Eng. Rep. 769), which in turn was based on a dictum in a case decided in 1839 (Duncan v. Findlater, 6 Cl & Fin. 894, 7 Eng. Rep. 934), failing, apparently, to note that the dictum in the earlier case had been overruled (See Mersey Docks Trustees v. Gibbs, 11 H.L. Cas 686) and that the decision in the other hand had been reversed. (See Foreman v. Mayor of Canterbury, 6 Q. B. 214).

At any rate, after the McDonald case was decided (supra, 120 Mass. 432), other courts in this country, though not all on the same theory or for the same reason, followed the lead of Massachusetts in exempting charitable hospitals from liability, and so in time did the courts of New York. (See 4 Scott on Trusts (2d ed., 1956), page 402, p 2895 et seq.; Bobbe, supra, 37 Corn. L.Q. 419, 420-425.)

Although it was not the first case to deal with the general subject, the case of Schloendorff v New York, Hosp. 105 N. E. 92, 52 L.R.A.N.S., was the most important of the early decisions to be handed down by a higher court. It was there declared broadly that a charitable hospital was not responsible for the negligence of its physicians and nurses in the treatment of patients.

Two reasons were assigned for that conclusion. The first was that one who seeks and accepts charity must be deemed to have waived any right to damages for injuries suffered through the negligence of his benefactor's servants. This rule was not limited to charity patients but was expanded to cover both paying patients and a private or profit-making hospital. See Bakal v. University Heights Sanitarium, 100 N.E. (2d) 51, affirming 277 App. Div. 572, 101 N.Y.S. (2d) 385.

The second reason which the court advanced was that the principle of *respondeat superior* was not to be applied to doctors and nurses. It was the court's thought that, even though employed by the hospital, they were to be regarded rather as independent contractors than employees of the hospital – because of the skill they exercised and the lack of control exerted over their work by the hospital's officials. Many other, later higher court decisions modified these various rules and older decisions.

A few weeks ago a higher New York court held that, irrespective of administrative or medical injuries to a patient, a charitable hospital is liable for injuries caused by negligence of its employees.

For illustration, in Bing v. St. John's Episcopal Hospital, 143 N.E. (2d) 3, the testimony showed facts, as follows: A woman named Bing was severely burned during the course of an operation performed by her own physician and surgeon for correction of a fissure of the anus, at St. John's Episcopal Hospital.

She had been made ready for the operation, before the surgeon's appearance, by the hospital anesthetist and by two nurses also in the employ of the hospital. Preparatory to administering spinal anesthesia, the anesthetist painted the lumbar region of the patient's back with an alcoholic antiseptic, tincture of Zephiran, an inflammable fluid, reddish in color. And, again, after induction of the spinal anesthesia, one of the nurses applied the Zephiran solution to the operative area. At that time there were three layers of sheeting under the patient.

The nurses were fully aware that the inflammable antiseptic employed was potentially dangerous. They

acknowledged that they had been instructed, not only to exercise care to see that none of the fluid dropped on the linen, but to inspect it and remove any that had become stained or contaminated. However, they made no inspection, and the sheets originally placed under the patient remained on the table throughout the operation.

The surgeon was not in the operating room when the antiseptic was applied and at least 15 minutes elapsed before he initiated the preoperative draping process. The draping completed, the surgeon took a heated electric cautery and touched it to the fissure to mark it before beginning the actual searing of the tissue. There was a "smell of very hot singed linen" and, "without waiting to see a flame or smoke," he doused the area with water. Assured that the fire was out, he proceeded with the operation. Subsequent examination of the patient revealed severe burns on her body and later inspection of the linen showed that several holes were burned through the sheet under her.

In subsequent litigation, the lower court held St. John's Hospital not liable in damages to Bing, but the higher court reversed this decision, saying:

**"We have already remarked the qualification from the application of the medical-administrative distinction. Hospitals should, in short, shoulder the responsibilities borne by everyone else. There is no reason to continue their exemption. The test should be, for these institutions, whether charitable or profit-making, as it is for every other employer: was the person who committed the negligent injury-producing act one of its employes and, if he was, was he acting within the scope of his employment.**

**The rule of nonliability is out of tune with the life about us, at variance with modern-day needs and with the concepts of justice and fair dealing. It should be discarded. In sum, then, the doctrine according the hospital an immunity for the negligence of its employees . . . we abandon. . . . The hospital's liability must be governed by the same principles of law as apply to all other employers."**

## Proof Must Be Definite

Considerable discussion has arisen from time to time over the legal question: What proof or testimony must be given before a court to justify holding a hospital corporation liable for subsequent death of a patient who was injured through negligence of a hospital employee.

A review of late and leading higher court cases establishes the law that a medical testimony as to the possibility of a casual relation between a given accident or injury and the subsequent death or impaired physical or mental condition of the person injured is not sufficient, standing alone, to establish such relation. By testimony as to "possibility" is meant testimony in which the witness asserts that the accident or injury "might have," "may have," or "could have" caused, or "possibly did" cause the subsequent death of the patient.

For instance, in Bland v. King Hospital, 342 Pac. (2d) 599, the testimony showed unusual and interesting facts, as follows: A man named Mylott was a patient in a hospital when he was injured when an employee of the hospital permitted him to fall to the floor while he was being moved from his bed to a wheel chair. Six days later he died. His death was caused by a coronary infarct.

Mylott's wife, Delia, sued the hospital to recover heavy damages and alleged that the injury and death occurred as the result of the negligence of an employee of the hospital.

The lawyer representing the hospital denied that Mylott's death resulted from his fall. On the other hand, the lawyer representing Delia argued that certain fractures sustained by decedent as a result of the fall caused shock, which, in turn, lowered decedent's blood pressure to such an extent that the fall was a contributing cause of the coronary infarct which resulted in his death.

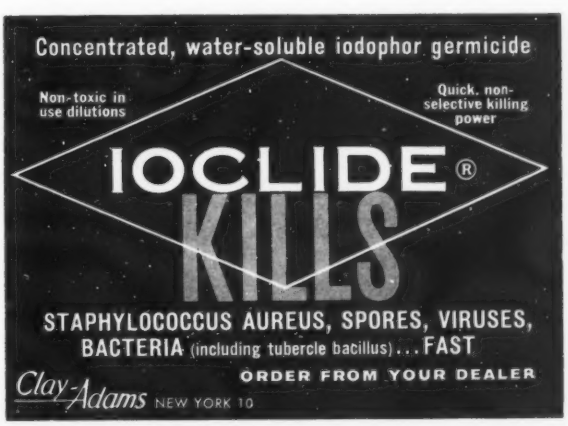
During the trial Dr. Pace testified that the fractures could have produced a decrease in blood pressure, and that the decrease in blood pressure could have been a contributing cause of decedent's death. Another physician testified that in a man of this nature that this fracture very probably could cause a drop in blood pressure and that a drop of blood pressure prolonged over this period of time could be a very excellent probable cause of intiating the mechanism that resulted in his death.

Notwithstanding this testimony the higher court refused to hold the hospital liable for Mylott's death, saying:

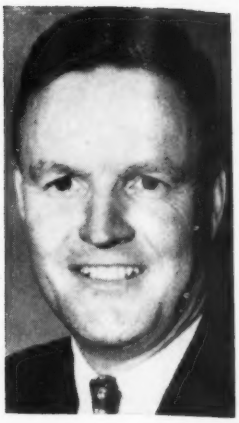
**"We conclude that any finding that decedent's fall was a proximate cause of his death would be the result of speculation and conjecture."**

For comparison, see Anton v. St. Paul, 159 P. 115; this court expressed its views in the following language:

**"The law demands that verdicts rest upon testimony and not upon conjecture and speculation. There must be some proofs connecting the consequence with the cause relied upon."**

*Senator Metcalf's analysis of developments in his own state and others offers valuable clues to trends of concern to everyone working in the broad areas of health and medical care.*



# Health Insurance Newsletter

By State Sen. George R. Metcalf

**Plight Of Non-Group Population Studied.** Individuals unable to secure their health insurance as members of employee or other types of groups are at a substantial disadvantage, it was pointed out in a special report prepared for New York Governor Nelson A. Rockfeller's special task force to study catastrophic expense insurance. The report, entitled "The Role—Past, Present and Future—of Non-Group Health Insurance in Meeting Catastrophic Expenses" was prepared by Thomas P. Weil, of the staff of John G. Steinle and Associates, special consultants to the Joint Legislative Committee on Health Insurance Plans.

"The non-group Blue Cross-Blue Shield contracts in the State of New York provide adequate protection against the costs of neither routine nor catastrophic illness," the report concludes. "Only one out of five non-group Blue Cross subscribers have more than 30 days of full coverage in a semi-private room in a member hospital . . . Broadening of inpatient benefits (e.g., children from birth, mental and nervous coverage for 30 days, diagnostic service), outpatient services (e.g., nursing home care, home care, drugs, laboratory procedures, diagnostic and X-ray facilities) and the extension of the 21 and 30-day contracts now are the most needed benefits in a non-group contract."

The report also notes a significant relationship in the loss-ratio averages of commercial health insurance policies. ("Loss ratio" is the percentage of benefits given in relation to premium payments paid into a particular company.) In the case of commercial group health insurance the figure is 89 percent; in individual health insurance, the figure is 53 percent.

Thus, group and individual commercial health insurance policies pay out 77 cents for every dollar of premium taken in. However, the non-profit plans, the report notes, returned 90 cents of each dollar as benefits.

* * *

**Attack On Major Medical.** According to the "Insurance Digest," Dr Clifton L. Reeder, vice president and medical director, Continental Assurance, told the Institute of Home Office Underwriters at its recent annual meeting in St. Louis that:

"Major medical violates the basic moral concept of insurance. It tempts the owner of the contract to cheat, and rewards him if he does. It tempts the doctor giving service to charge more for it, and rewards him if he does. It therefore interferes with the traditional doctor-patient relationship by putting on a third party the problem of evaluating what a doctor's service is worth to his patient. When a company disagrees with the fees charged or the use made under the contract, then both policy-holder and physician get mad."

* * *

**Dental Insurance Hearing Held.** Only one of four indigent New York City youngsters eligible for dental care receive treatment because of limited personnel and facilities, it was pointed out at a public hearing conducted by the State of New York Joint Legislative Committee on Health Insurance Plans.

Arthur Bushel, D. D. S., director of the City's dental program, and appearing at the hearing on behalf of the Community Council of Greater New York, said 220,096 youngsters were eligible for treatment last year but because of limited funds only 51,323 could be admitted.

Senator Metcalf announced at the hearing that he planned to meet soon with representatives of existing dental insurance plans and of non-profit health insurance groups to see if economies could be achieved and duplication of facilities avoided in the establishment of dental care prepayment plans.

* * *

**Allstate Offers Health Insurance.** Allstate, which has a reputation in the automobile field of offering low-cost insurance, invaded the health field recently. Their particular emphasis is on the selection of coverage provided to avoid "waste or duplication." At the request of the New York State Joint Legislative Committee on Health Insurance Plans, the company provided information on premiums and benefits for a "typical" family.

It was assumed that the insured is a bookkeeper, earning $6,000 a year, with group coverage through his employer providing $12 a day for 31 days. For such a person and his wife, Allstate offered three alternative plans.

One such plan provided $200 a month for a year, after a seven-day waiting period for total disability

(*Continued on page* 55)

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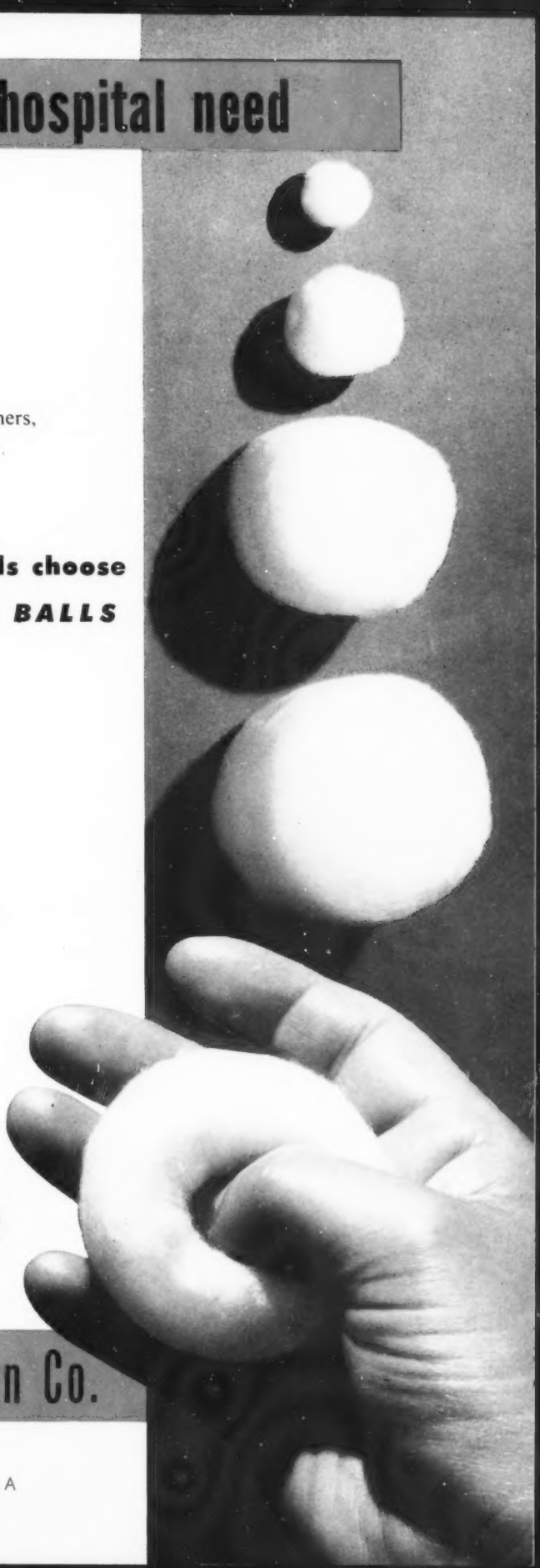

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(*Continued from page* 52)

for accident or sickness, or $100 a month for a year for partial disability. Medical expense coverage would be $10 a day up to 365 days, plus $150 for hospital "extras"; payment of maternity benefits up to $100; payment for emergency treatment of accidents up to $30; payment of surgical expenses up to $200 plus 15% anesthetist allowance; and $3 a daily visit for in-hospital doctor visits. The package includes $2000 payment in the case of accidental death of the insured, $1000 for his wife, $500 for a child, or a double benefit while a fare-paying passenger on a common carrier. This policy bears the annual premium of $208.90 for husband and wife, $267.60 if it includes two children.

These provisions could be varied, with a corresponding change in premium, to add or subtract specific details of coverage depending on the individual circumstances.

• • •

**Hearings on New Bills.** A two-day series of hearings on a set of bills designed to establish sweeping improvements in the health insurance coverage of New York State residents were scheduled for Albany on February 18 and 19. The bills being presented by the Joint Legislative Committee on Health Insurance Plans would provide for such measures as a minimum of 120 days of hospitalization in all policies, with corresponding medical and surgical benefits, mandatory conversion from group to individual coverage and the availability to Blue Cross subscribers of a rider covering up to 365 days of hospital confinement.

• • •

**Effect Of New Laws.** On December 1, 1959, the New York State Joint Legislative Committee on Health Insurance Plans sent letters to 20 representative private insurance companies underwriting health insurance in the State of New York with a request for information on the effect the recent committee-sponsored laws providing extra health insurance protection had had on their premiums and underwriting policies. This series of four laws, referred to here before, went into effect July 1, 1959.

By the middle of January thirteen companies had answered the letter. Their most frequent comments were as follows:

The renewability provisions did not affect the practices of the companies since any individual or family accident and sickness policies issued during the past three years were either non-cancellable and guaranteed renewable, or guaranteed renewable with the company reserving the right to change premium rates on a class basis.

The right of a terminating employee to convert to an individual or family policy was elected less than five per cent of the time by employees who were eligible to do so as a result of the new law's provisions.

The new law had little or no effect on health insur-

(*Continued on next page*)

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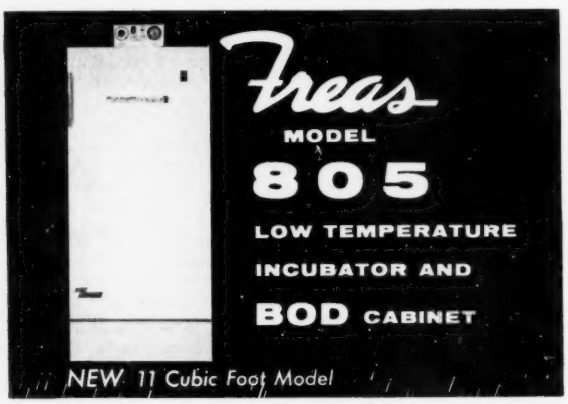


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ance premiums. One company took the occasion to review their premium scale under individual conversion policies and effected significant reductions averaging about 12 percent.

One well-known company replied that: "When the New York State legislation, referred to in your letter, became effective, our company withdrew this policy from our New York market. Our primary reason for withdrawal was because of that provision of the new law which denied our company the right to refuse renewal, after a policy had been in force two years, because of deterioration of health of the insured. Although for some time, it has been our renewal underwriting practice not to refuse renewal because of deterioration of health, we did not feel that we could entirely relinquish the right and continue to issue a substantial number of these policies which in effect, would become guaranteed renewable, at a premium rate which did not contemplate such a feature. It is our opinion that such practice could only eventually result in an adverse loss ratio against our company."

This survey seems to indicate that a majority of the insurance companies that responded to the committee's letter had had to institute only minor changes in order to comply wtih the new laws.

In addition, it is claimed by Blue Cross spokesmen that one of the laws, forbidding cancellation of individual coverage, has had the effect of placing Blue Cross at a competitive disadvantage with insurance companies in certain situation.

* * *

**Drug Costs Top Doctor Fees.** The Social Security Administration reported, during January, that in 1958 Americans paid more for medicines and medical appliances than they paid in fees to physicians – the first time in history that this has happened. Taking note of this trend, the *New York Times* editorialized that:

"Whether or not we are paying too much for drugs, the problem of how we are to meet these costs remains an urgent one, especially in major illnesses where there are also the doctors' and hospital bills to pay. As a matter of fact, drug costs may then be so high as to prevent people from receiving proper medical treatment, or make them hesitate to get their prescriptions filled when necessary."

* * *

**H. I. P. Cuts Infant Death Rate.** Fewer infant deaths among its subscribers in comparison to the general population were noted by the Health Insurance Plan of Greater New York in a report that was issued recently. The report also noted a higher percentage of mothers who began their pre-natal care in the first three months. It was observed that the higher standards among its subscribers could not be attributed by H. I. P. to a more favorable socio-economic distribution since the differences persisted through virtually all broad occupational classes.

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# Consultant's Corner

By John G. Steinle

**Q. In planning student nurses' dormitories what recreation facilities should be provided?**

A. This will depend to a large degree on the size of the facility and the part of the country in which it is located. In moderate climate the outdoor facilities are more practical than in severe climates. Outdoor facilities in moderate climates according to preference of students are: swimming, volleyball, tennis, shuffleboard, outdoor basketball and softball. In colder areas an indoor swimming pool is favored but only practical if the school is large enough. It is usually considered that a minimum student body of 100 is necessary to make an indoor swimming pool economically feasible.

An all-purpose room that can be used for student assembly, dances, plays and organized athletics should be provided. In schools of over 75 students this should be large enough for conversion to a gymnasium.

In all areas, according to a recent survey, the favorite attraction is a sun deck. Several years ago separate parlors or date rooms were constructed. These have not been effectively used. A comfortable but not formal lounge should be provided. A snack bar is a desirable item.

**Q. Our state is planning another medical school. It is considering locating the new medical school in a population center that is far removed from any major university campus. It is also planning to use an existing community hospital as the principal teaching hospital. Do you have any comments?**

A. A medical school requires as a core a hospital completely under its control that bears little resemblance to a community hospital. For example, medical-school hospitals built in the last eight years averaged approximately 1,050 square feet per bed contrasted with approximately 560 feet per bed in voluntary hospitals constructed under the Hill-Burton program. Medical-school hospitals must include laboratories, conference rooms, and research facilities adjacent to or located near most patient room areas. This would certainly imply that planning conversion of any existing hospital to a major university teaching hospital is not feasible. The state university hospitals established in the last few years have included hospitals specially designed and controlled by the medical school. These include Arkansas, Alabama, Florida, Washington, Kentucky, the University of California, Los Angeles, and the two state universities in New York. These latter two schools initially attempted to operate without state-controlled and owned medical-school hospitals. At present both institutions are planning their own hospitals.

This does not mean that community hospitals are not necessary to supplement the clinical facilities of a state-owned institution. However, the supplemental facilities do not require the specialized facilities of the core teaching hospital.

If another medical school is established in your state it should be created on the campus, and as part of a major university. It is almost impossible because of the medical curriculum to achieve a well-rounded educational and cultural background except by exposure of the medical student to the academic environment. It has been found that the best medical teaching and research personnel require interdisciplinary resources of other departments in the university. Modern medicine has become so complex that it demands a number of broadly skilled specialists working with the physician as a total team. These people need training in a number of areas other than those provided in the restricted and specialized medical school. Some of these include medical librarians, occupational therapists, medical social workers, psychologists, and physical therapists. Other specialized departments that can specially enhance the total team include schools of pharmacy, social work, nursing and dentistry.

A mistake is often made in an attempt to utilize existing resources by locating a medical school in a population center that has existing clinical material, large hospitals and trained specialists. In these instances the medical school develops as a separate entity, independent from the total university structure. Such units usually develop a parochial character dominated by, or sometimes even worse, in direct conflict with, the local medical specialists.

The physician interested in teaching and research will prefer an academic environment to the pedestrian one of an industrialized center with the attending aspects of competitive medicine. He and the medical school located on the university campus with the appropriate hospital will quickly attract the patients that provide the clinical material.

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# An Educational Program For The Career Hospital Pharmacist †

By Donald C. Brodie*

"With the greater demand for hospitals there has arisen a greater demand for hospital pharmacists, and a greater demand upon hospital pharmacists in the way of professional ability" (1). These words were spoken 38 years ago by E. S. Austin, pharmacist in the General Hospital of the city of Cincinnati.

If the above statement described conditions as they existed 40 years ago, we must be impressed with the accuracy with which they portray conditions today. For example, the Congress of the United States was advised in 1957 that 30,000 new hospital beds are currently needed annually to meet needs imposed by increases in population alone (2). On the basis of his analysis of the above and other data, Archambault (2) has estimated that by 1970, 500 to 600 pharmacists will be needed annually for hospital practice.

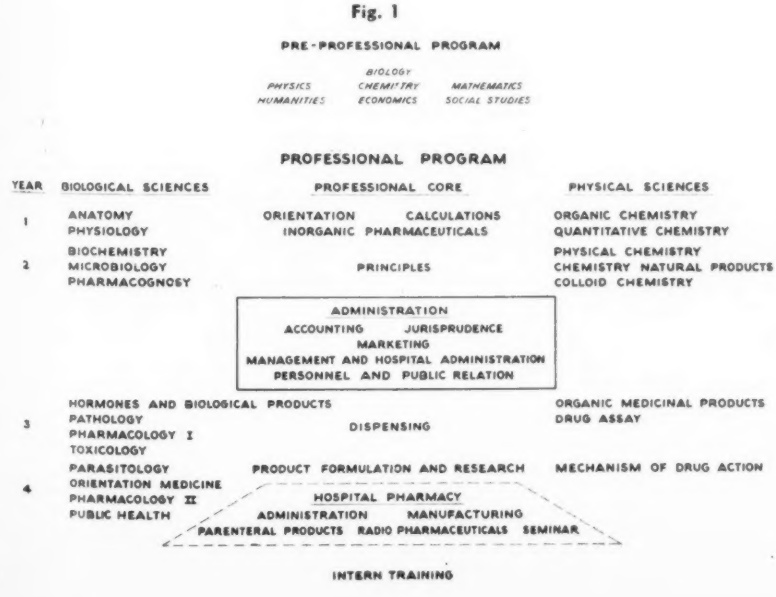
In a plea for higher educational standards for hospital pharmacists, the aforementioned Mr. Austin (3) speaking about qualifications mentioned, among others, two important facts. ". . . That his (the pharmacist's) professional coworkers (physicians and others) will not accept as a colleague any pharmacist who is not their intellectual equal or the recipient of an education that is on a par with their own . . . That only a man accustomed to the habit of study and possessing a mind trained to observe and think will be able to help solve the problems of curative medicine . . ."

†Reprinted with permission from the November, 1959, issue of the Journal of the American Society of Hospital Pharmacists.

*Professor of Pharmacy and Director of Pharmaceutical Services, University of California Medical Center, San Francisco 22, Calif.

Presented before the American Society of Hospital Pharmacists, Cincinnati, Ohio, August 1959.

**Fig. 1**

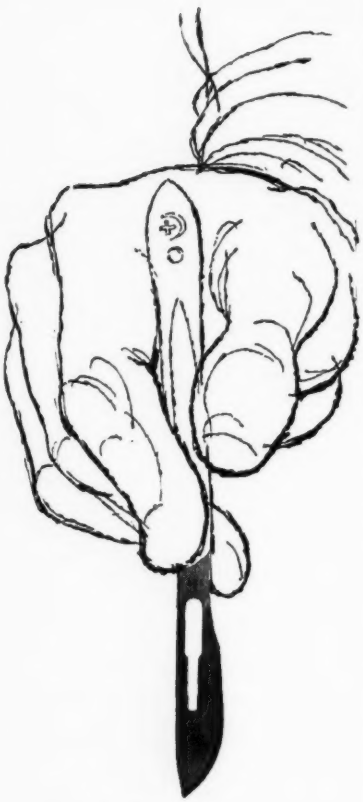



This reference to the writings of Austin has been made for two reasons: *first,* it illustrates for us the value of the past in bringing problems of the present into focus, and *second,* I know of no one in recent years who has, in a philosophical sense, described more succinctly an educational perspective for hospital pharmacists.

Austin lived at a time when hospital pharmacy was without stature; he lived at a time when pharmacists were being prepared for professional service not by education, but by little more than technical training. His plea for a 4-year baccalaureate program plus a year of intern training must have shocked his professional contemporaries, including many pharmaceutical educators, since the minimum program in pharmaceutical education at that time was 2 years. Looking in retrospect, we must conclude that Austin was being driven by a sort of prophetic professional vision.

Pharmaceutical education has undergone several active phases of growth since the early 1920's. Today we are rapidly approaching the time when all schools of pharmacy in the United States will have implemented the action taken by the American Association of Colleges of Pharmacy in 1954, whereby pharmaceutical education becomes a minimum 5-year program embodying the elements of both general and professional education. As we reach this new plateau in the development of pharmaceutical education, we find ourselves scanning the professional horizons for signs that may in some way assure us of the acquisition of new pro-

*(Continued on next page)*



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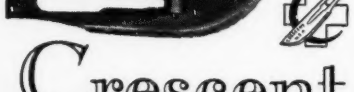

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fessional strengths through education.

As a profession, we have been seeking to improve the quality of our services. We have been seeking to broaden the perspectives for professional service among our people. We have been hoping that the self-analysis that came with the Pharmaceutical Survey will in some way catalyze us in a spiritual sense so that our dedication to public health and safety may become more deeply embedded in our professional consciousness. Only the intervention of time will permit us to determine the extent to which our professional objectives have been attained through the events of the past few years.

In a general way, you are familiar with the developments of the past 15 years as they relate to pharmaceutical education. I want to think that you have been able to synthesize, from that which has been written and spoken about pharmaceutical education and professional needs during these years, an educational philosophy for pharmacy that is educationally sound not only for today, but for the years immediately ahead. Without a sound educational perspective for the profession, we have little basis for considering the educational problems of hospital pharmacy.

As we prepare to discuss with some specificity education for hospital pharmacy, there are several factors that I wish to mention in order to place before you the contemporary scene as I see it.

(1) Pharmacy is no longer a homogeneous profession; it is heterogeneous in that within our professional framework we can identify a number of rather well-defined specialties, hospital pharmacy being a prime example. In addition, there are others that are as yet poorly developed, but whose distinguishing characteristics will become more definite with increased educational standards. Increased standards in medical education hastened the development of specialization in medicine, and the same will come in pharmacy. Pharmacy in its practice and in its educational program will reflect the development of specialization. Rufus A. Lyman, noted pharmaceutical educator and journalist, in his last report as chairman of the Committee on Problems and Plans of the A.A.C.P. commented as follows: "Whether we like it or not, specialization is on the way, and it is questionable whether we could stop it if we had the desire to do so. . . . " (4).

(2) The development of hospitals in the United States assures the growth of hospital pharmacy. Archambault (2) estimates that approximately 10 per cent of the current graduating pharmacists each year are finding their way to hospital practice. With the increasing number of opportunities in hospitals, there is reason to believe that even a higher percentage of graduates will elect hospital pharmacy in the future.

(3) Hospital pharmacy has reached professional maturity; it has acquired stature; it is a recognized specialty. Hospital pharmacy has attained a position of distinction within the profession based on service and public acceptance of that service. It has commanded respect from other groups in the health sciences. Whether from choice or decreed by destiny, hospital pharmacy now must realize that it has a responsibility to the profession that it dare not discharge by default.

The personnel needs for hospital pharmacy will be supplied through three separate channels: direct from pharmacy school or through general pharmacy practice, in either case with no special training for hospital practice; through internship training in hospitals; and through programs of specialized education and intern training.

We must accept the fact that future personnel needs in hospital pharmacy will not be filled by people with specialized education. The schools and colleges simply cannot supply the number of trained pharmacists required to meet the anticipated needs. Graduate-enrollment data in member colleges of the A.A.C.P. for 1958 (5) revealed that 25 institutions offered M.S. programs in hospital pharmacy, in which there were 63 students enrolled. Twenty-two of

these 25 institutions offered internships in hospital pharmacy. Thus, at the present, the supply of specially trained personnel for hospital pharmacy is far short of future needs.

As an educator and as an administrator, I am extremely concerned about the qualifications of our career hospital pharmacists — those who will provide the administrative and professional guidance for the development of adequate pharmacy service in the nation's hospitals. I am concerned about the education of career hospital pharmacists because of the outlook for increasing demands on the pharmacy service in the years ahead, in addition to the need that hospital pharmacy has for an educated and competent leadership for itself.

There is in the foreseeable future, I believe, a period in which the challenges to hospital pharmacy will be even greater than those of the past, and which will require expansion of present-day programs and perspectives if they are to be met. We are living in a changing social order, one in which changes in concepts of medical care are occurring before our very eyes. Leadership to meet the demands created by social change must be developed.

Before attempting to discuss educational requirements, let us list the essential professional qualifications desired in a career hospital pharmacist: He should be an educated individual, one who can formulate a sustained-release form society of educated people; he should be a competent pharmacist with specialized training and proficiency in the practice of hospital pharmacy, and he should be skilled and versed in administrative techniques that pertain to the operation of a modern hospital.

These general qualifications for the career hospital pharmacist can, in the opinion of the author, be acquired in an educational program that provides for:

*First,* general education sufficient to place the hospital pharmacist on an intellectually compatible basis with members of the other health professions.

*Second,* a scientific and professional education that qualifies the hospital pharmacist to operate independently as a specialist, and as such to provide specialized information regarding drugs, their origin, their chemical and biological properties, their hazards, their indications and contraindications for use, their therapeutic equivalents, in addition to other information.

*Third,* an integration of education and training for operation and management of pharmaceutical services, and for supervised experience in the acquisition of skills pertaining thereto.

After its analysis of the educational needs for pharmacy, the Pharmaceutical Survey 1946-49 recommended a program of 2 preprofessional years and 4 professional years. The recommendation resulted from the need in the 4-year program for (a) general education in "foundational and cultural subjects," (b) adequate time to develop professional and scientific courses in their proper sequence, and (c) necessary time to develop specialty programs for students.

In commenting on this latter point, the Survey (6) stated that its recommended program would "provide enlarged opportunity for the diversification of training which the profession needs," and "it would provide the flexibility necessary to meet the individual and personal interests and needs of students." Hence, the program of education recommended by the Survey provides adequately for the development of specialization in pharmacy referred to previously.

The Doctor of Pharmacy degree provides an appropriate degree structure for the program, it being particularly appropriate for hospital pharmacists who are in routine contact with physicians, dentists, and others who hold professional doctor's degrees. The program recommended by the Survey will undoubtedly be the reference standard for educational developments in American pharmacy for years to come and there are those (7), including the author, who think that the pattern of pharmaceutical education will, in time, become that proposed by the Survey. Thus, it is only logical that we attempt to develop an adequate program of professional education for hospital pharmacy within the framework established by the Pharmaceutical Survey.

This I propose to do by providing you with a skeletal educational program (Fig. 1) of essential subject material arranged according to major curriculum sequences (biological sciences, physical sciences, pharmacy administration and professional core). I have attempted to use titles that are descriptive of subject matter and, in some instances, they are identical with rather commonly used course titles. I have purposely omitted reference to semester or quarter units or to required or elective courses.

Since standardization of curricula beyond certain limits is not, in my opinion, desirable, our main concern should be the essential areas of knowledge within an educational program. The following program is designed to require 2 years for completion of the preprofessional and 4 years for the professional requirements. The internship follows the fourth professional year or is taken concurrently with it over a two-year period, in either case requiring the equivalent of one year of supervised training.

I believe that the educational strength in the professional program can be attributed to 3 features, without minimizing the contribution of other portions.

*First,* a well-developed series of biological sciences in proper sequential arrangement makes it possible for the student to have the background to comprehend the use and behavior of medicinal agents in man. He will have not only an understanding of drug action *per se,* but he will have at his command a professional vocabulary, as well as a knowledge of related scientific areas that will permit him to converse with members of the other health professions in such a way as to command interprofessional respect.

The hospital pharmacist must be more than an informant regarding drugs; he must be able to dis-

(*Continued on page* 65)

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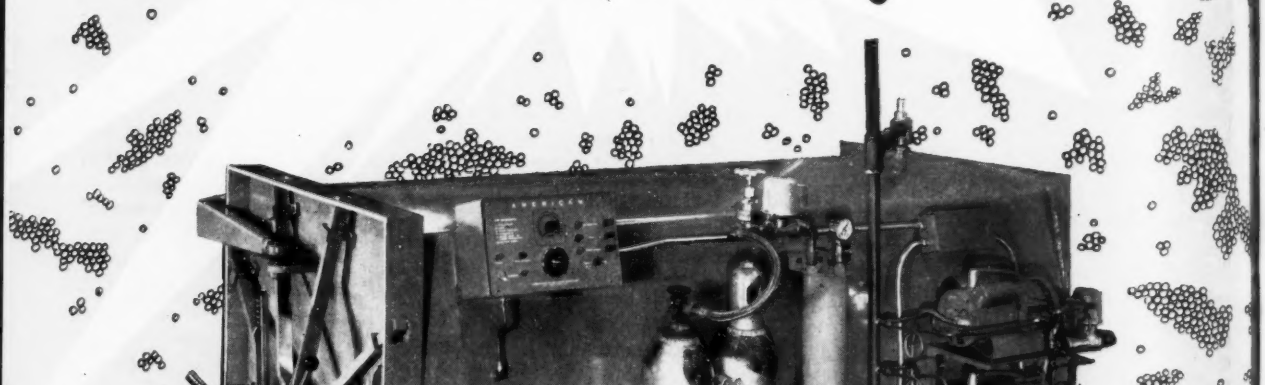

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(*Continued from page* 63)

cuss them intelligently in a discriminatory manner. In order for him to do so, he must have training in certain areas which have not been included in the traditional pattern of the pharmacy curriculum, such as pathology and parasitology in addition to an orientation in medicine.

Pathology, for example, brings the student into intimate contact with the principles of morphologic and physiologic changes related to abnormal states such as inflammation, infection, degeneration, regeneration and repair, and metabolic, endocrine and vitamin disturbances. Parasitology provides him with a consideration of the animal parasites and fungi that cause disease in man, with particular reference to the epidemiology, pathogenesis, symptomatology and public health factors of each. Orientation in medicine acquaints the student with problems concerning the care of the patient, with special emphasis on pharmacologic and therapeutic approaches.

For one who professes to be an expert in the field of drugs, a background in the above areas is essential if he is to possess depth of understanding sufficient to formulate a sound professional judgment. A biological background as outlined, superimposed on his knowledge of chemistry, provides the basis for the pharmacist to develop his role as the drug consultant in the hospital.

*Second,* a sequence of courses in the administration area that is built around economic principles and is extended to include key areas of business administration, namely, marketing, management and personnel problems, and hospital administration provides the administrative pharmacist with a background which should enable him to adapt himself to almost any hospital operation, large or small.

*Third,* the period of specialization occurs at a time when pertinent developments are taking place in the other areas of the program. For example, a real educational climax can be achieved when the student is studying hospital pharmacy administration simultaneous-

(*Continued on next page*)


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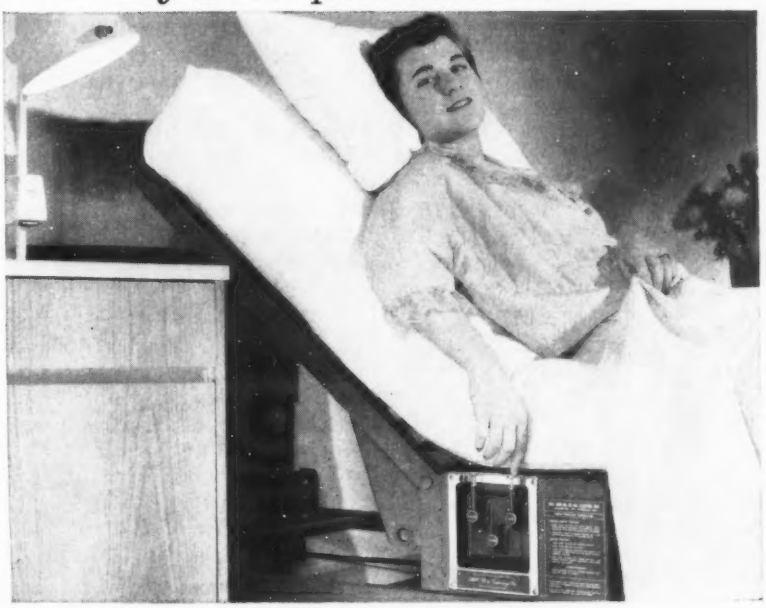

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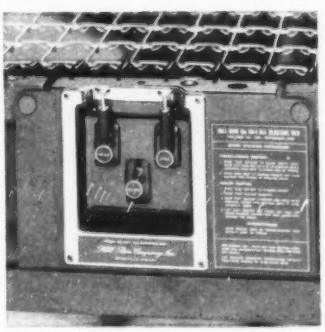

This close-up view shows how the control panel has been designed and engineered for the patient's ease of control. Note the three levers which control the height adjustment and spring positions are within easy reach of patient's hand.

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ly with orientation to medicine, selected topics in pharmacology, mechanism of drug action, and drug product formulation.

There is only one area in the physical science category that perhaps should be justified, namely, colloid chemistry. Colloid science is the "study of non-crystalline matter having an organization intermediate between that of independent molecules and of living matter . . ." (8). It is important in our considerations because many biological systems are composed of materials in the colloidal state, namely, proteins, fats and carbohydrates.

In addition, many pharmaceutical systems, for example, those containing natural and synthetic gums, are colloidal in nature. Hence, a knowledge of colloid chemistry as a physical science is essential not only to an understanding of the properties of pharmaceutical systems and their components, but also to an understanding of many phenomena in the biological sciences. Furthermore, this phase of science provides the basic knowledge for an understanding of the relationship of particle size to drug availability, of the numerous applications of surfactants to pharmaceutical systems, and of the use of rheological systems in stabilizing drug products.

The area of drug product formulation and research is designed to provide the student with an opportunity to use his basic scientific information in a creative way. Today's pharmacist should have some knowledge of how modern pharmaceuticals are designed scientifically. As a pharmacy student, he should be able to design and formulate a sustained-release form of medication, and to evaluate its effectiveness, in terms of availability of the active component, by some scientific method, perhaps by the rate of urinary excretion of the drug.

This is but one of numerous examples of creative training that a pharmacist should have as a student. In addition, this training provides him with a background that permits an understanding of the probable architecture of a manufacturer's product. This particular area lends itself to an orientation in pharmaceutical research and application of scientific methodology.

Personal testimony and reliable data both reveal that present-day career hospital pharmacists regard their educational backgrounds as being deficient in biological sciences, pharmacy administration, pharmaceutical technology, and general education. It is particularly striking to learn that many administrative pharmacists today with specialized programs of education at the level of the master's degree, actually regard themselves as no better qualified for today's hospital practice than many holding bachelor's degrees.

There are perhaps a number of explanations for this paradox. In all fairness, however, I believe that it suggests that the present-day specialized programs in pharmaceutical education for hospital pharmacists are not fulfilling the needs with which today's administrative pharmacists are confronted.

I believe that the program presented here for your consideration has distinct educational advantages when compared with the master's level graduate programs that have been developed in recent years; that when it is combined or followed by a well-conceived internship, an educational program for the career hospital pharmacist will result through which present and future needs in hospital pharmacy can be developed.

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# prescription pad

## Soothing Throat Spray

A new analgesic antimicrobic gargle and throat spray is manufactured by the Purdue Frederick Co. Called Pharycidin Concentrate, the new medication is intended to reduce fever and provide relief from the systemic malaise accompanying sore throats of infectious origin.

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Pediatrics

By John L. Sever, Ph.D., M.D.

# Possible Role of Humidifying Equipment In Spread of Infections from Newborn Nursery*

Since 1954 there have been approximately 500 epidemic outbreaks of staphylococcal infection in maternity hospitals in the United States.[1] Each of these epidemics involved 25 percent or more of the infants and transmission from the nurseries to the wards resulted in breast abscesses in about 20 percent of the nursing mothers. Increasingly numerous reports of the high incidence of staphylococcal and other bacterial infections in the newborn nursery have appeared in the literature. It is for this reason that attention is directed to the newborn nursery as one of the most important potential sources of epidemic nosocomial infections in the general hospital.

Humidifying equipment is employed in every newborn nursery as an essential part of modern therapy. This is particularly true in the care of premature infants. The possible association between humidifying equipment and hospital-acquired infections has been suggested by Hoffman and Finberg.[2] However, bacteriologic study of the equipment used in this form of therapy in the nursery seems to have been neglected. A review of the literature on this point failed to reveal any significant published investigations.

It is the purpose of this paper to report an investigation that was conducted to determine if bacterial contamination was present in the humidifying equipment in the newborn nursery; if present, to what extent and what type; and to determine what methods of eliminating this possible source of nosocomial infection would be effective.

## MATERIALS AND METHODS

The humidifying devices in 14 incubators (9 Armstrong ®, 5 Isolettes ®) were studied during this investigation. Each Armstrong incubator contained a humidifying pan of water over the heating apparatus. Each Isolette contained a humidifying chamber in the base of the unit and an Oxifier high-humidity attachment on the side.

Ten 1-gallon storage bottles also were studied. Five of these bottles contained ordinary distilled water for use in the humidifying equipment. The other five bottles contained *sterile* distilled water for use in the humidifying equipment.

Three 5-ml samples of water were taken from the humidifier of each Armstrong incubator; from the humidifier and Oxifier of each Isolette; and from the storage bottle of water. Dilutions of each sample were made with sterile distilled water and were cultured separately on nutrient agar plates and thioglycollate glucose broth.

The degree of bacterial contamination was determined by counting the colonies on the plates, and the various organisms which were isolated were identified through the use of routine bacteriologic procedures. For each sample, 10 replicate platings were made. These methods are quite similar to those employed by Macpherson[3] in a study of oxygen humidifiers in use in a general hospital.

The data was analyzed by the statistical methods outlined by Sever and Youmans[4] for similar enumeration studies. In each instance the mean for the individual determinations was computed as were the 95 percent confidence limits. Significant differences between means were determined for a level at which $P=0.05$.

## RESULTS

The results of the investigation are summarized in Tables I and II. Bacteriologic examination was conducted on the water from a total of 29 units (incubators, Oxifiers and storage bottles). The complete study was done on two separate occasions; the first prior to, and the second after, the institution of changes in procedure which are described in the discussion.

From Table I it can be seen that the bacterial contamination of all water in use before changing standard procedures was extremely high. Macpherson[5] considers water used for humidification purposes to be grossly contaminated if it contains over 250 organisms per milliliter. This gross contamination was found in the stored distilled water used for all of the humidifying and oxifying equipment. Further-

(*Continued on the next page*)

Division of Pediatrics, Evanston (Ill.) Hospital, and Northwestern University Medical School at time article was first published; now at Children's Memorial Hospital, Chicago.

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more, the contamination of the water in the humidifiers and Oxifiers was 8 to 18 times as great as that found in the storage bottles. Contamination was greatest in the open humidifying pans of the Armstrong incubators.

After instituting the changes in procedures which are described in the discussion, all bacterial counts on sampled water were significantly reduced (confidence limits 95 percent, P=0.05). None of the water samples was found to be grossly contaminated and all contamination was within the limits found for sterile distilled water exposed to air for several days in the newborn nursery.

From Table I it can be seen that the organisms recovered most often were, in the order of decreasing frequency: *Escherichia, Achromabacter* and *Alcaligines faecalis,* pigment-producing bacilli, *Staphylococcus aureus,* etc. Furthermore, it is evident that after the institution of changes in procedures, there was a considerable reduction in the frequency of occurrence of all types of organisms. However, the relative frequency of the various types of organisms remained comparatively unchanged.

**TABLE II**

**Analysis of Organisms Recovered from Humidifiers, Oxifiers and Storage Bottles**

| Type of Organism | Number of Units from Which Organisms Were Recovered* | |
|---|---|---|
| | Before Changing Procedures | After Changing Procedures |
| **Escherichia** | 18 | 6 |
| **Achromobacter and Alcaligines faecalis** | 10 | 2 |
| **Pigment-producing bacilli** | 6 | 3 |
| **Staphylococcus aureus (Coag. pos.)** | 5 | 1 |
| **Bacillus subtilis** | 3 | 1 |
| **Diphtheroids** | 3 | 1 |
| **Staphylococcus albus** | 3 | 0 |
| **Pseudomonas aeruginosa** | 2 | 0 |
| **Yeasts and fungi (nonpathogenic)** | 2 | 1 |
| **Streptococcus viridans** | 1 | 0 |
| **Enterococci** | 1 | 0 |

*Total of 24 units in each group.

## DISCUSSION

The strikingly high degree of gross bacterial contamination found in the original group of units studied in this investigation was considerably greater than that considered acceptable for humidifying equipment.[3, 5]

It was recognized that these humidifying units provided an ideal environment for the growth of micro-organisms. Droplets of sugar-containing food were abundant in all of the incubators and the temperature of the humidifiers was often in the range considered most favorable for the cultivation of bacteria of medical importance.

A careful study of hospital procedures revealed several factors which were considered to contribute to the gross contamination found in the units. First, although distilled water was employed in the units, no procedure was established for the cleaning of the storage bottles. Consequently, bottles could be used repeatedly with only an occasional rinsing with fresh distilled water. Secondly, a quarterly inspection and cleansing of the humidification equipment in the hospital's oxygen therapy department was the only routine cleaning given the equipment. Although other cleansing was done periodically, no procedures governing the frequency or method of this activity were established. Thirdly, when additional water was necessary in a humidifier or Oxifier due to evaporation, it was the usual practice to simply add water to that remaining in the unit.

The relative frequency of the various types of micro-organisms was quite similar to that found with other humidification equipment,[3] except for the great numbers of Escherichia encountered. However, this can probably be accounted for on the basis of the close proximity of this particular equipment to the abundant supplies of coliform organisms found in feces.

In an attempt to reduce the bacterial contamination in the humidifying equipment in the newborn nursery the following standard procedures were adopted:

1) Only *sterile* distilled water was used in all humidification units.

2) Water was sterilized in the storage bottles themselves and no other storage bottles were used.

3) All humidification equipment was cleaned thoroughly with detergent between use for patients and at weekly intervals.

4) All humidification equipment was dismantled completely, cleaned throughly with detergent, and inspected by the oxygen therapy department every three months.

5) Water from humidifiers was discarded and replaced when the level fell due to use.

6) Bacteriologic checks were conducted periodically to determine the degree of contamination.

After instituting these changes in procedures there was a significant reduction in bacterial contamination in all this equipment. In most instances only slight

**TABLE I**

**Degree of Bacterial Contamination of Water Used in Humidifiers and Oxifiers**

| Units | Number of Units | Contamination (bacteria/ml) Before Changing Procedures | After Changing Procedures |
|---|---|---|---|
| **Armstrong incubator humidifiers** | 9 | 14,850* ± 6,350 | 125* ± 48 |
| **Isolette humidifiers** | 5 | 8,200 ± 3,800 | 88 ± 36 |
| **Oxifiers** | 5 | 6,750 ± 2,550 | 76 ± 28 |
| **Distilled water (storage bottles)** | 5 | 850 ± 325 | |
| **Sterile distilled water (storage bottles)** | 5 | | 20 ± 6 |

*Mean value for all units. Confidence limits (95 percent).

contamination existed and in no instances was gross contamination present. This impressive reduction of bacterial contamination was accompanied by a decrease in the number of various types of organisms recovered. However, because there was no significant change in the relative frequency of the types of organisms recovered, it would seem unlikely that the sources of these micro-organisms were significantly altered. It would appear that for the most part these water reservoirs, which had permitted extended multiplication of micro-organisms already present in the nursery, were removed.

The revised procedures have been adopted as standard at Evanston Hospital. Further investigation of the sources and transmission of nosocomial infections in the newborn nursery are being conducted.


**SUMMARY**

Because of the increasing importance of the newborn nursery in the occurrence of nosocomial epidemic infections, an investigation was conducted on the role of humidifying equipment in this connection.

The results of this study indicate that an extremely high degree of gross contamination existed in the water of the humidifying devices in use in the newborn nursery. After the institution of the described procedures governing the care and cleansing of the humidification equipment, the degree of bacterial contamination was reduced to a low level.


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*(The following were abstracted from papers given at the recent International Congress of Paediatrics, held in Montreal, Canada.)*

***Nervous Disorders***

## Eighty Children With Nervous Complications of Grippe Studied

We observed 80 children suffering from nervous complications of grippe. Symptoms of encephalitis were found in 66 cases, myelitis was observed in nine patients, while in five cases the peripheral nervous system was affected.—*D. S. Futer, T. N. Krupina, E. A. Edelstein,* Moscow, U.S.S.R.

***Affects Unborn***

## Female Fetus Masculinized By Oral Androgens, Progestins

The administration of methyltestosterone and other androgens to pregnant mothers has caused masculiniza-

*(Continued on next page)*


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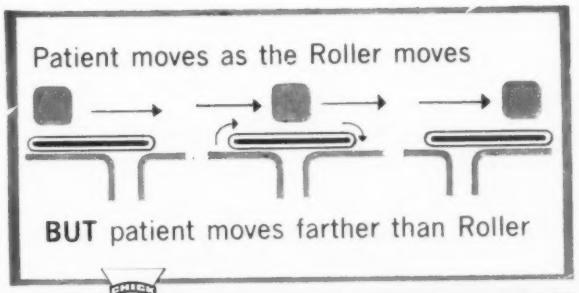


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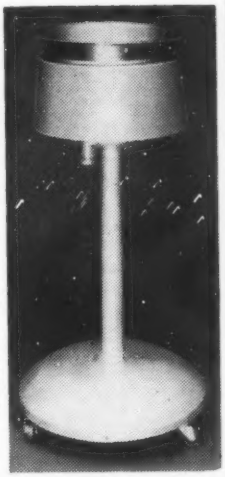

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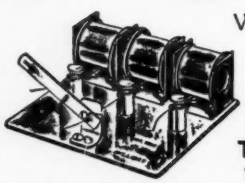

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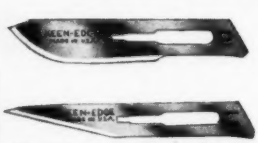

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tion of the external genitalia of female fetuses. It has also been discovered that oral progestin, 17-ethinyltestosterone (known as Pranone, Progesteroal, Lutocylol, Anhydrohydroxyprogesterone or Ethisterone) may also have masculinizing effects on the fetus.—*Lawson Wilkins,* Baltimore, Md.

***Farmer's Disease***

## Q-Fever Possible In Occupational Groups

Physicians should be aware of the possibility of Q-fever infection in occupationally exposed groups, such as agricultural workers.

A total of 655 pooled samples of herd milk were screen-tested for Q-fever antibodies by the capillary agglutation test. Of these 655 specimens, 68, or 10.4 percent, demonstrated antibodies for *C. burnetii,* the causative agent for Q-fever.—*Matilda McIntyre, H. A. Wiebelhaus, R. H. Sueper, J. A. Youngstrom,* Omaha, Nebraska.

***Klinefelter's Syndrome***

## Male Mental Defectives Have Female Nuclei

According to a study of institutionalized male mental defectives, about one percent of them have female nuclei and can be included in Klinefelter's syndrome.

The survey also revealed several mental defectives, both male and female, whose cells generally bear the female XX-sex chromosome complex with two of these complexes in about one-fourth of their cells. —*Murray L. Barr,* London, Ont., Canada.

***Successful Nephrosis Therapy***

## Steroid Results Studied After Eight Years

Eight years ago, 65 patients—52 children and 13 adults —were treated for nephrosis ("pure" nephrosis and the nephrotic stage of glomerulonephritis) with a type of prolonged intermittent steroid therapy.

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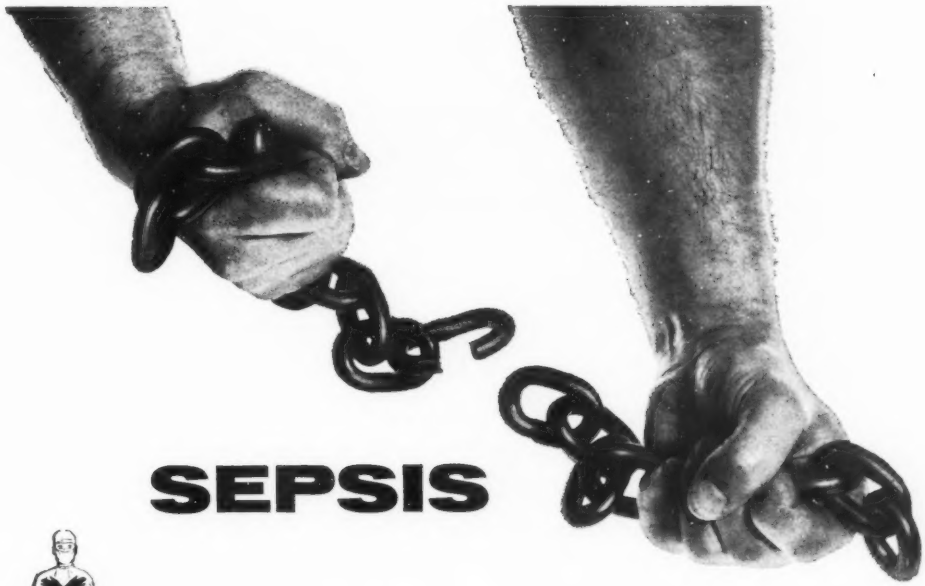
In rabbits who received two marrow transfusions there was a marked enhancement of the survival rate. —*S. Vince, J. M. Garvan, E. P. George, F. A. Rocke,* Sydney, Australia.



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[1]Allen, H. F.: J.A.M.A. 170:261, 1959; and further research data to be published.

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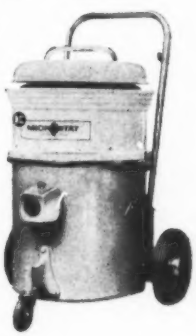
[2]Wheeler, W. E.: Data to be published.



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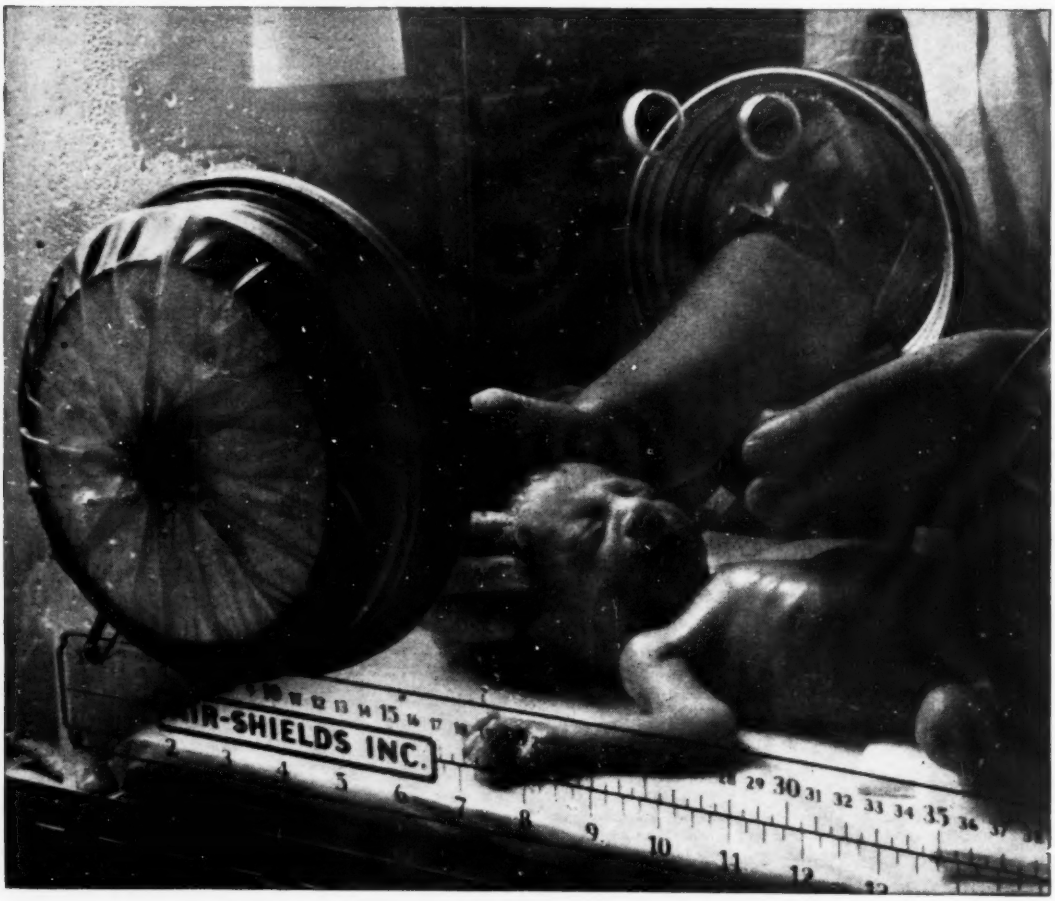


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1. Lynn, H.B.: Postgrad. Med., 22:429, 1957.
2. Dancis, J.: Postgrad. Med., 22:194, 1957.

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# Fetal Electrocardiography In Obstetrical Management

By S. D. Larks, Ph.D.†

In addition to its obvious value in diagnosis of fetal heart irregularities, fetal electrocardiography has proved a valuable aid in the positive identification of the presence of a living fetus, and in the diagnosis of multiple pregnancy. This relatively simple diagnostic procedure can also tell the presentation of the fetus.

Electrocardiographic study of the fetal heart, although demonstrated positively as early as 1906, has only recently come under concentrated investigation. The lack of adequate instruments for pickup and amplification is at least partly responsible for this slow development. With new instrumentation and technic, fetal heartbeats can be recorded in utero even in early pregnancy.

## GENERAL DISCUSSION OF F-ECG*

Fetal electrocardiography can be a useful tool. Our experience indicates that in vertex presentations the f-QRS is upward, and in breech presentation it is downward. This is quite reasonable, since in breech presentations the electrical axis of the fetal heart is in the same general direction as that of the maternal heart. Hence, the fetal and maternal complexes should be in the same direction and should resemble each other. The opposite is true for the vertex presentations, since in these the fetal heart electrical axis is directed upward and to the right, while the maternal vector is to the left and down, so that the fetal complex should be 180° out of phase with the maternal complex.

It should be possible to diagnose transverse or nearly transverse presentations by the use of horizontally orientated electrodes, and, indeed, to determine by the direction of the complex whether the fetal head is to the right or left. Figure 1 explains the significance of the f-QRS deflections in determining the position of the heart and, thus, the position of the fetus.

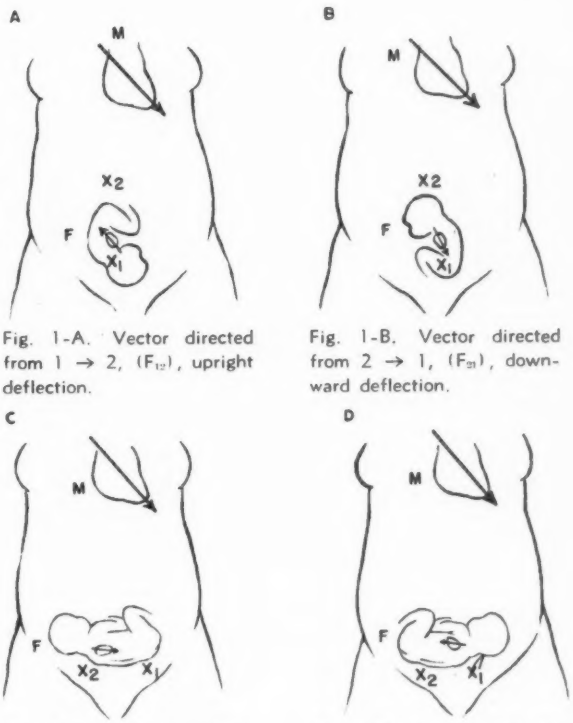


Fig. 1-A. Vector directed from 1 → 2, ($F_{12}$), upright deflection.

Fig. 1-B. Vector directed from 2 → 1, ($F_{21}$), downward deflection.

Fig. 1-C. A downward deflection with electrodes as shown indicates vector is from 2 → 1, ($F_{21}$), and head is as shown.

Fig 1-D. An upward deflection indicates vector directed 1 → 2, ($F_{12}$), hence head is as shown.

**Fig. 1. Utilization of the f-QRS direction in longitudinal and transverse leads for information as to the presentation of the fetus and the position of the fetal head. In *A* (vertex presentation) the electrical axes of maternal and fetal hearts are 180° out of phase, so that the maternal and fetal complexes should be oppositely directed. In *B* (breech presentation) the principal components of maternal and fetal electrical axes are in phase, so the complexes should be in the same direction. In *C* and *D* the information thus derived is used to indicate the position of the fetal head in transverse presentations.**

On occasion, close to or during delivery, when it was difficult to hear the fetal heart tones, it has been possible to show a clear fetal electrocardiogram.

It has been noted that between the sixteenth and twenty-second weeks the fetal electrocardiogram first becomes large, sharp and clear, in certain instances

(*Continued on next page*)

*DEFINITIONS—The definition of terms employed is as follows: f-ECG: the fetal electrocardiogram in utero; f-QRS: the fetal QRS complex as observed with short time constants, as in this investigation, hence a somewhat more specific nomenclature; newborn ECG: the electrocardiogram of the newborn immediately after delivery, taken with the hand electrode on back or chest, or with standard Lead II; electrical axis of the heart: vector visualizing the resultant of all the differences of potential within the heart at the moment of the greatest deflection of the QRS complex.

†Assistant professor, Biophysics, Medical Center, University of California at Los Angeles.

more so than in later months. The reasons for the relative ease of demonstration at this time are not yet known.

**Fig. 2. Normal fetal electrocardiogram with the fetus in vertex presentation. Longitudinal leads. Maternal complex is seen to be directed down, and the fetal complexes are directed upward and occur at a faster rate.**

However, at this time and afterward the f-ECG may become of diagnostic importance. The successful diagnosis of multiple pregnancy at 16 and 21 weeks may be used as an example. It should be possible to diagnose multiple pregnancies in general in this very simple way, without the risks entailed in exposure to radiation.

The earliest fetal complexes recorded in this series, at 11½ to 15 weeks, are directed downward. Judging by the consistent relationship which has been observed between such complexes and breech presentations at later stages of gestation, when clinical or radiologic evidence is available, it would seem that, ordinarily, the fetus presents by the breech at this early period of pregnancy. Similarly, the fact that the f-QRS changes to an upright complex in the usual case at about 20 weeks suggests that rotation to the more common vertex presentation takes place at about this time. It is possible, however, that a combination of rotation about two axes, not only the transverse but also the longitudinal axis of the fetus, might make changes in the f-ECG which could resemble breech-to-vertex rotation.

Figure 2 shows examples of the normal fetal electrocardiogram with the fetus presenting by the vertex. Since the objective of these investigations was

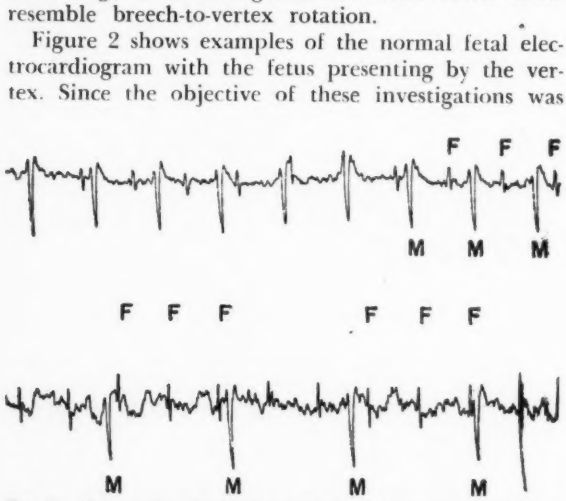


**Fig. 3. Appearance of the fetal electrocardiogram with differing relative fetal-maternal rates. Upper tracing shows fetal and maternal rates which are similar, largely because of a fast maternal rate. Lower tracing shows appearance with a slow maternal rate. On occasion, three fetal complexes can be seen in the interval between two maternal complexes.**

to study the fetal ECG, electrode polarities were arranged so that in the normal vertex presentation of the fetus, the f-QRS would be upright. With this arrangement the maternal QRS was directed downward, i.e., in the opposite direction. The f-QRS was large and unmistakable. The faster rate of the fetal heart was demonstrated clearly, making identification of the fetal electrocardiogram easy.

In Figure 3 are shown instances of relatively slow or fast maternal heart rates as well as examples of slowing and of acceleration of the fetal heart rate. The upper tracing shows an instance of a rapid maternal rate with a somewhat slowed fetal rate. In this instance the two rates were not markedly different, so that there was roughly one fetal complex to one maternal complex. The lower tracing shows the association of a slow maternal heart with a rapid fetal rate, so that there were often three fetal complexes to one maternal complex.

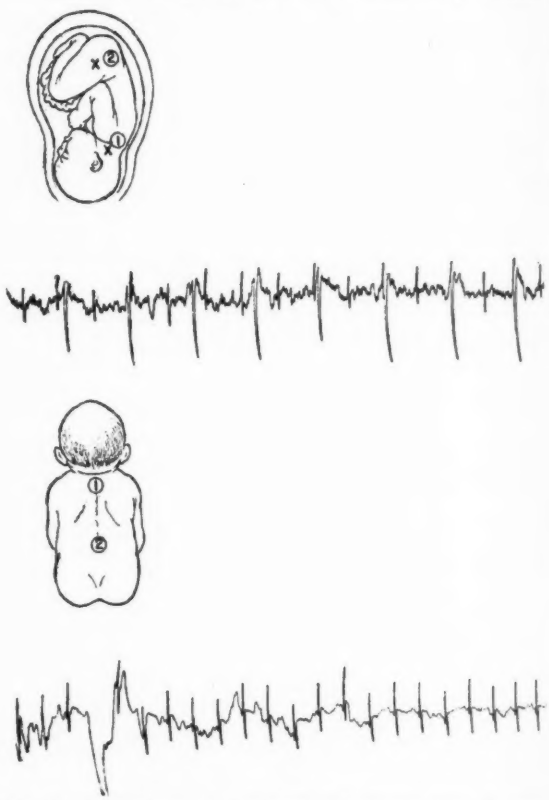

**Fig. 4. Comparison of the fetal electrocardiogram in utero with the newborn electrocardiogram. Vertex presentation. Upper tracing, the fetal electrocardiogram 10 minutes before delivery. Lower tracing, the newborn ECG 5 minutes after delivery. Every effort was made to place electrodes in comparable positions. The complexes are identical before and after delivery.**

In Figure 4 may be seen an interesting comparison of the fetal electrocardiogram in utero a few minutes before delivery, with the newborn electrocardiogram just after delivery. In this instance every effort was made to place the hand electrode on the newborn in the same relation to the fetal heart as was the case for the surface electrodes while the fetus was

**Fig. 5. Fetal electrocardiogram in breech presentation. The f-QRS is directed down, in contrast to the vertex presentation. Maternal and fetal complexes have the same primary direction.**

still in utero. Inspection of the f-QRS in utero and the newborn QRS shows marked similarity.

Examples of the f-QRS in breech presentation may be seen in Figure 5. When the fetus presented by the breech, the f-QRS was directed oppositely to the f-QRS in vertex presentations, and, as might be expected, the fetal and maternal complexes were in the same direction. In Figure 6 the f-QRS associated with a breech presentation in utero is shown above, and for comparison the newborn electrocardiogram with similarly placed electrodes is shown below. The parallelism is striking.

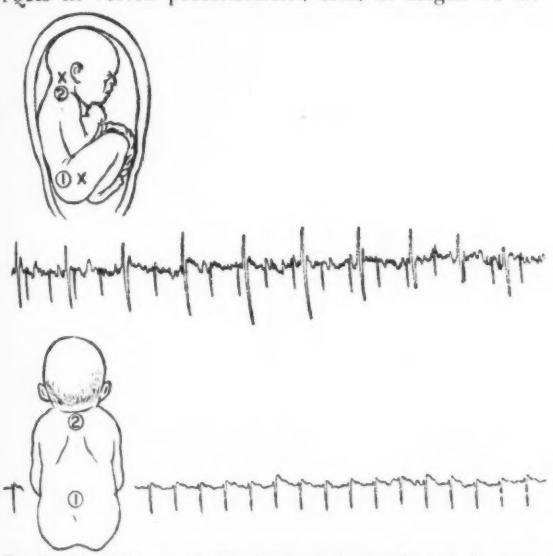

**Fig. 6. Comparison of the fetal electrocardiogram in utero with the newborn electrocardiogram, in a breech presentation. The complexes before and after delivery are very similar. Upper tracing, fetal electrocardiogram. Lower tracing, newborn electrocardiogram with electrodes similarly placed.**

The earliest positive fetal electrocardiograms recorded in this series have been at 11½ weeks, following the presumed date of conception. Several such positive findings have been made, with some questionably positive findings at 12 weeks.

It may be noted that the earliest complexes recorded were directed downward. In successive tracings, at weekly intervals, a shift in the f-QRS to the upward direction was ordinarily observed by the twenty-second week. Another result of interest was that in the interval between the seventeenth and twenty-second week, the f-ECG rather suddenly became very large, clear and prominent, in many instances more so than in later pregnancy.

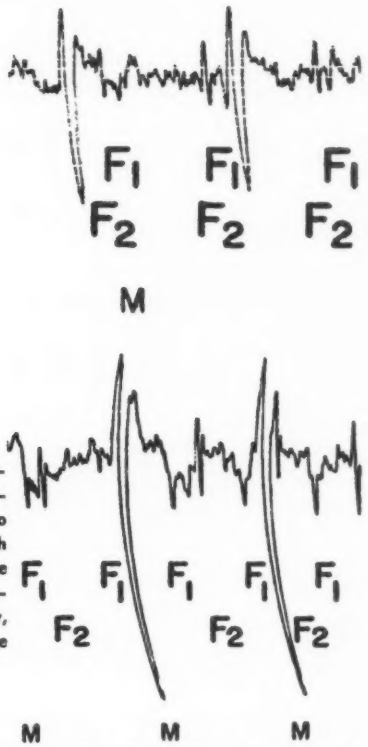


**Fig. 7. The fetal electrocardiogram in multiple pregnancy; two sets of twins. In each instance the presence of twins was demonstrable radiologically, and viable twins were delivered.**

### DIAGNOSIS OF MULTIPLE PREGNANCY

In Figure 7 are shown recordings from four different sets of twins. It may be observed that, in addition to the large maternal complexes labeled M, there were two different kinds of fetal complexes occurring repetitively. One was a downward directed f-QRS labeled as $F_1$, the other was an upward directed complex labeled as $F_2$. The $F_1$ waves can be traced through the record independently, as can the $F_2$ complexes, and it may be observed that the rates of the two fetal hearts were slightly different. The different directions of the two fetal complexes suggested that one twin was presenting as a vertex and the other as a breech, and this was corroborated by clinical examination. The difference in the fetal rates results in the fetal complexes approaching each other and then seemingly receding, a beating phenomenon rather characteristic of wave motions of slightly dif-

*(Continued on page 80)*

**Fig. 8. Cardiac anomaly as indicated by the fetal electrocardiogram in utero, near term. The f-ECG shows a wide and notched f-QRS, with S-T segment displacement. The direction of the main complex is upward, although the fetus was shown radiologically to be a breech presentation. The infant showed respiratory distress, and survived only 5 days.**

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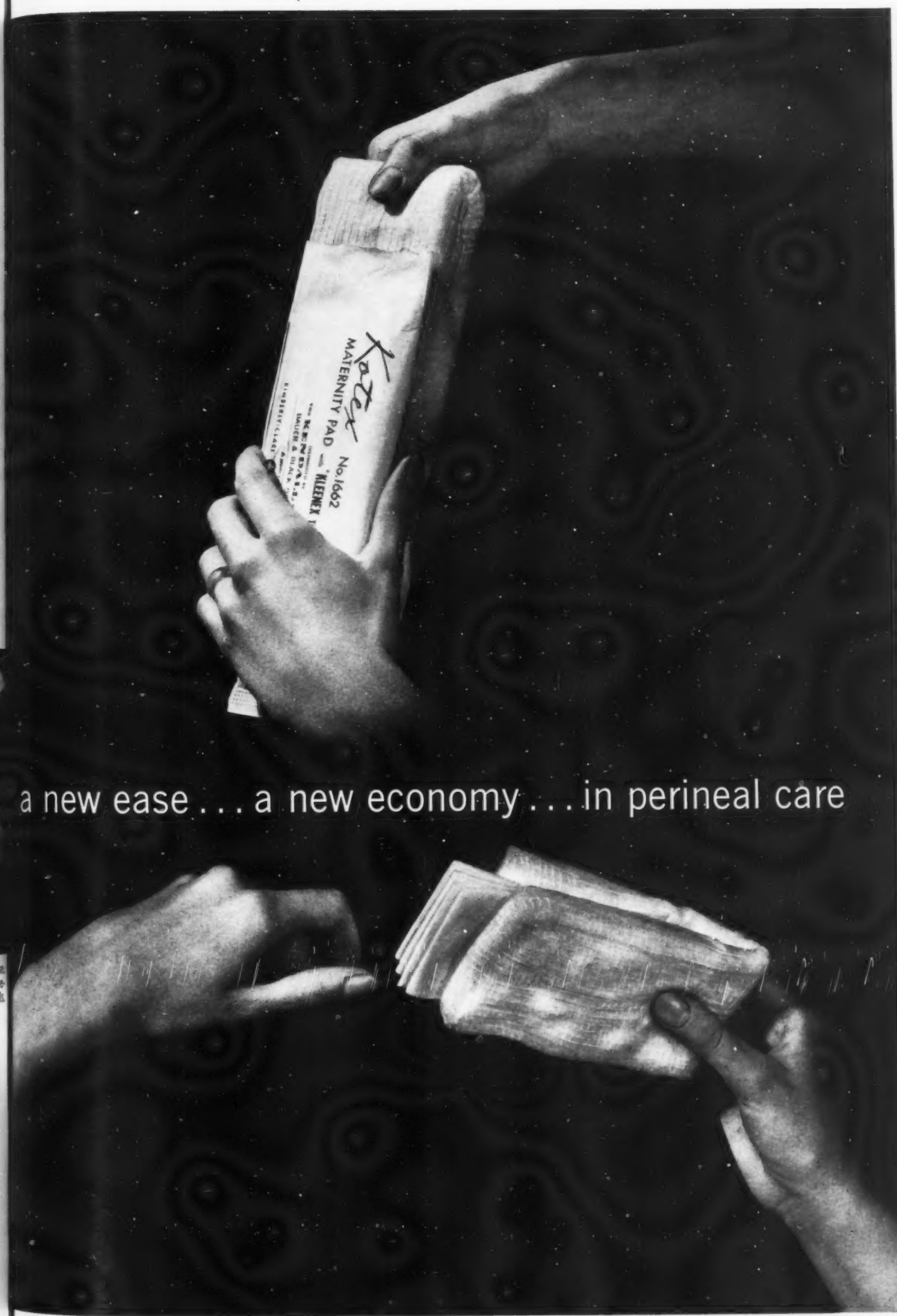
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fering rates. This factor facilitates the identification of twins. In the lowest tracing, because of electrode placement, both of the large complexes were of fetal origin, the maternal complex M being relatively small.

It should be noted that in instances where the viability of the fetus is in doubt, a positive f-ECG is certain and definite. A negative finding, however, does not have meaning, since in a small proportion of cases difficulties have been encountered in demonstrating the f-ECG in the presence of a living child. Further improvement of technic may remove this problem. It should also be noted that a negative finding in early gestation is without significance.

### CARDIAC ANOMALY

Much interest attaches to the demonstration of cardiac anomaly in utero. It might well be possible to demonstrate such anomalies at the twentieth week, unless in certain instances damage takes place later. Congenital defect should be demonstrable, and perhaps special preparation might be indicated in such cases at delivery.

Figure 8 shows an example of a demonstration of cardiac anomaly in utero. There were several unusual features in this tracing. First, the direction of the complex would seem to indicate a vertex presentation, yet x-ray evidence showed a breech. Second, the complexes were unusually wide and notched, suggesting conduction difficulties. Third, the complexes showed the prolonged overshooting which cardiologists usually refer to as S-T segment displacement. In this instance the infant showed delayed respiration at delivery and survived only five days. At autopsy, coarctation of the aorta was found.

### TECHNIC: METHOD AND MATERIALS

The equipment utilized was one or more channels of a six-channel Offner Dynograph, employing the Model 9406 preamplifier. With this instrumentation, deflections of several centimeters for the fetal R wave are possible. In this system, RC coupling is used only in the preamplifier, the rest of the system being the direct-coupled chopper amplifiers of the Dynograph. In order to minimize base-line variation due to various slow signals (including the maternal T wave), a time constant of 0.04 second has been employed. One practical effect of this choice is to emphasize the fetal QRS complex. Paper speed has been routinely 25 mm. per second.

Two types of electrode arrangements have been used. In the first, German silver alloy disks 1 cm. in diameter were the electrodes, and these were placed in the desired positions after skin preparation. Electrode positions have included the following, depending partly upon the stage of the gestation: (1) midline bipolar leads, with the upper electrode just above the umbilicus and the lower electrode just above the symphysis pubis; (2) longitudinal bipolar leads on the right or left sides of the uterus, and transverse or horizontal bipolar leads placed suprapubically, especially in early pregnancy; (3) anteroposterior bipolar leads, with the anterior lead on the uterine fundus, and the posterior lead 10 cm. above the coccyx; (4) unipolar leads, in which an exploring electrode has been placed on the uterus, with a relatively indifferent electrode placed on the thigh.

The second type of electrode arrangement consisted of a series of special hand electrodes, which were silver buttons set in a plastic holder, with electrodes ordinarily spaced 10 cm. This hand electrode was of special importance in early pregnancy, and was applied with pressure so as to bring the electrodes close to the fetal heart.

Skin preparation consisted of applying ECG paste, rubbing the paste into the skin, and then carefully washing off the paste. The disk electrodes were then moistened with the paste, placed in position, and taped down with two strips of adhesive tape. For the hand electrodes, skin preparation was much the same; the paste was also applied to the electrodes and the assembly placed in position with moderate pressure.

A total of 260 fetal electrocardiograms from 145 patients has been recorded. In certain instances as many as 16 consecutive recordings have been obtained from cooperative subjects, through the full gestational period.

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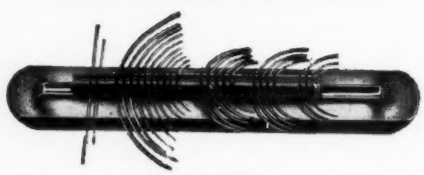

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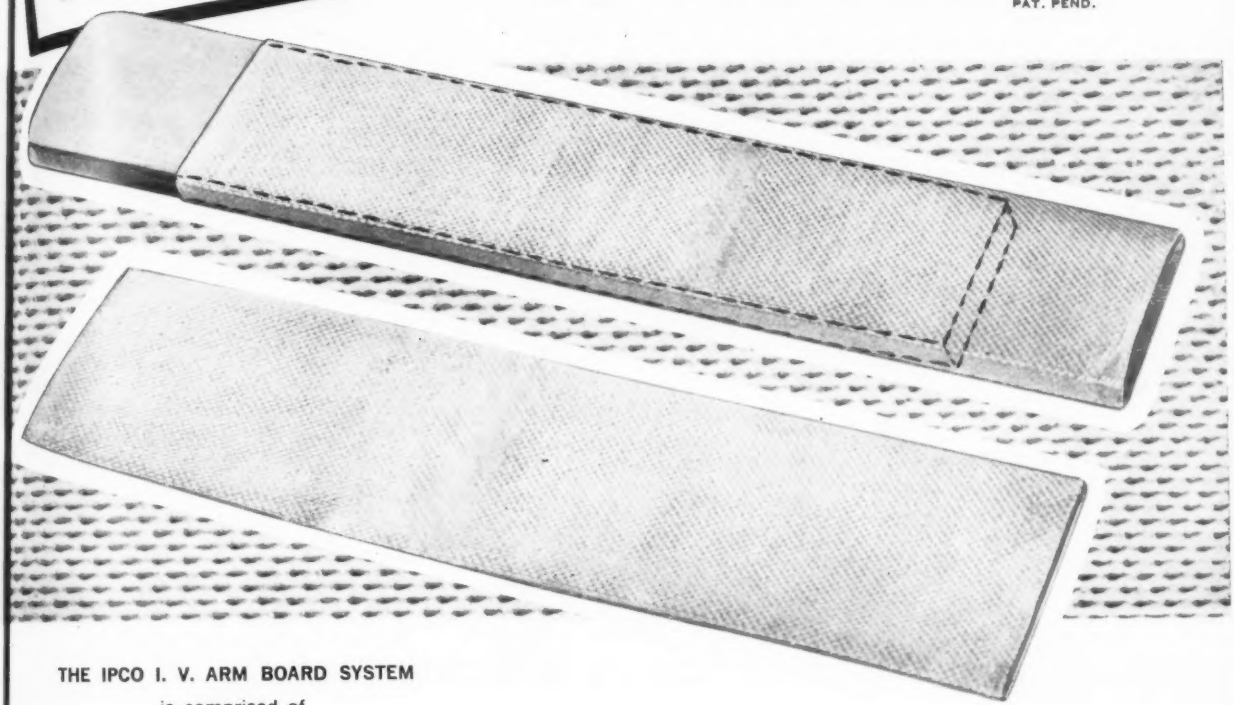

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| 6 | $ 1.35 ea. | 6 | $ 1.20 ea. |
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| HE-616A Dura-Weve® Sleeve for I.V. Arm Board | | HE-616AX Dura-Weve® Sleeve for I.V. Arm Board | |
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| 100 | $8.45 C | 100 | $4.45 C |
| 300 (case) | 7.75 C | 300 | 4.25 C |
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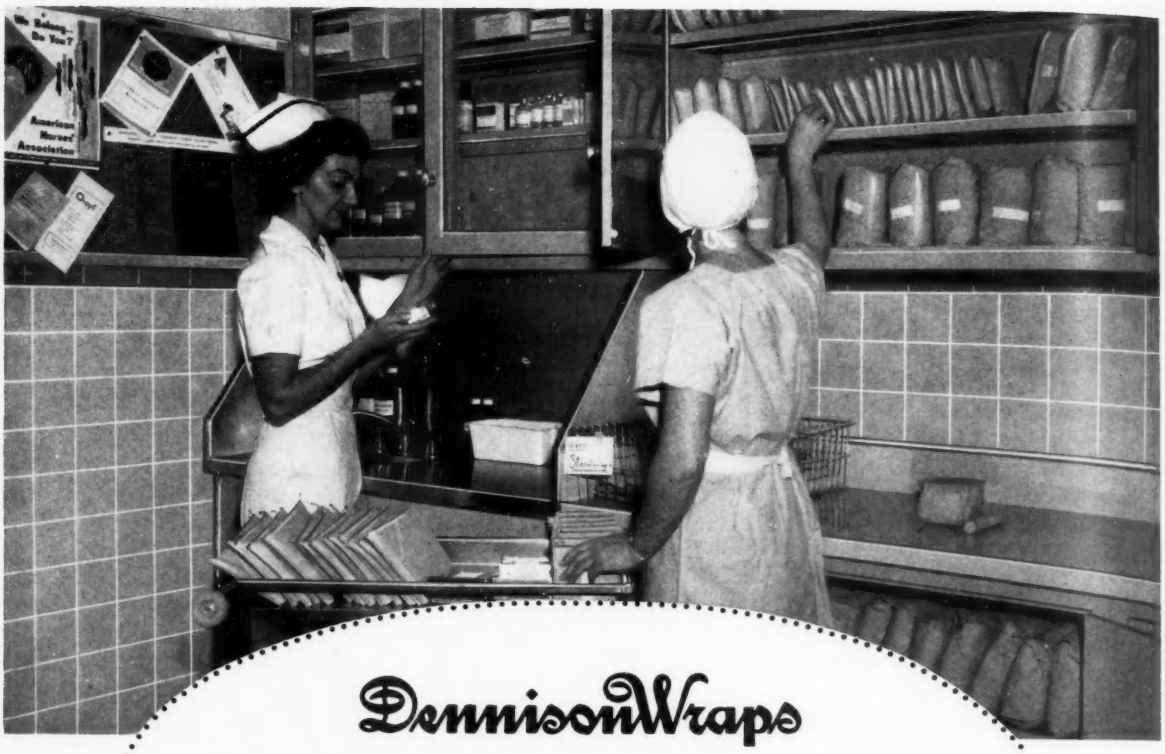

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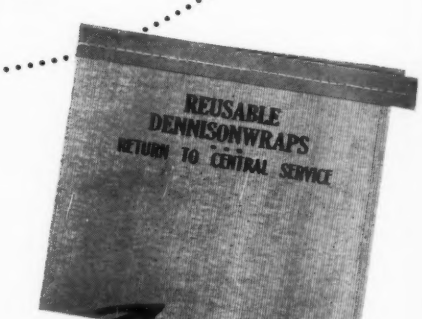


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(*Continued from page 9*)

destroyed by burns or infection, however, remains its normal hue. The contrast enables surgeons to determine what areas to excise.

The method was also used in a case of bone infection. Here, the diseased bone remained white, while the healthy bones became green.

The dye disappears in about two days and the patient returns to his normal color.

## Heart Surgery Safe Despite Rheumatic Fever

Young persons who have had rheumatic fever may undergo heart surgery safely, provided the disease is in an inactive state. Albert Brest, M.D., Joseph Uricchio, M.D., and William Likoff, M.D., Philadelphia, base their opinion on cardiac surgery performed on 30 patients 12 to 20 years old.

The doctors state that there are two common reasons why cardiac surgery on rheumatic heart disease patients is generally avoided. One is the belief that heart failure symptoms in this age group arise from active rheumatic inflammation of the heart. The other is the claim that surgery reactivates the rheumatic fever in those under 20.

In the doctors' study, the average interval between the most recent rheumatic fever attack and the surgery was 8.6 years; in no case was it less than three years.

Followup observations from four months to four years gave no evidence of rheumatic fever activity.

## Doctors Should Stress Sunshine Dangers

The physician should make himself responsible for educating the general public on dangerous effects of sunlight, warns John M. Knox, M.D., Baylor University College of Medicine, Houston.

Among the skin changes related to sunlight exposure are a coarse, leathery appearance, wrinkling, and pigmentary changes. Dr. Knox adds that skin damaged from chronic exposure is predisposed to the development of premalignant and malignant tumors.

According to Dr. Knox, suncreams containing derivatives of paraminobenzoic acid may increase the minimal erythema threshold four to six times.

## Hospital Beauty Salons Boost Morale

When a female patient reaches for a lipstick and begins to worry about her appearance, she's getting well, according to Otto and Caroline Schaefer, managers of the hospital beauty salon, Columbia-Presbyterian Medical Center, New York City.

Expert beauticians from the salon visit the rooms and perform their services for bedridden patients. All patients must have their physicians' permission before any beauty treatments are allowed.

Although such services are nonmedical in nature, the Schaefers believe they have a therapeutic value, since morale tends to deteriorate along with poor appearance.


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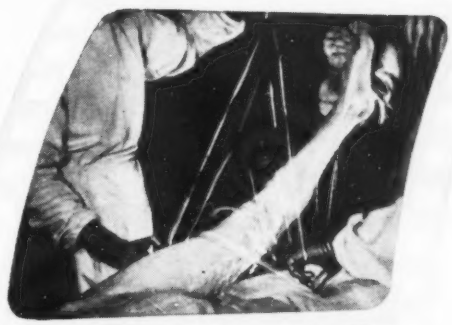

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*Premiered on the scientific program of the Clinical Meeting of the American Medical Association, December, 1959. Approved for inclusion on the American College of Surgeons' list of approved films.*

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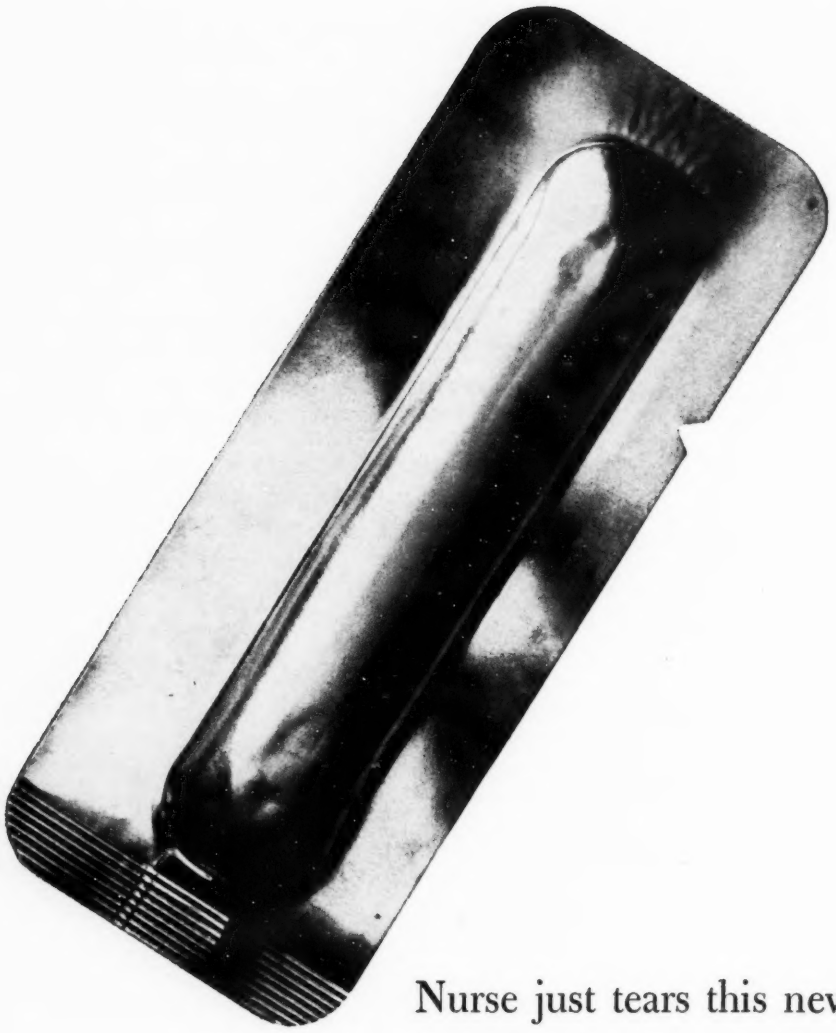

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# ETHICON®

***An industrial engineer unmasks costly operating-room practices that result in departmental deficits and uneconomical use of personnel***

# Challenging New Study Made Of Traditional O.R. Practices

By Alice R. Clarke, R.N.

In August, 1958, Maurice D. Wolfe, management engineer and assistant administrator of The Jewish Hospital of St. Louis, embarked on a managerial study of the operating-room department as one of a series of studies he is conducting on all phases of the operation of this progressive hospital.

By the end of 1959, with the study completed, industrial engineer Wolfe came up with some thought-provoking, if controversial, conclusions and recommendations that could significantly alter the staffing, supervising, and scheduling patterns of operating room departments in large hospitals, if generally adopted.

The purpose of Wolfe's over-all study, according to his report, is to find methods to furnish the best patient care at the lowest possible cost. His purpose and *modus operandi* for this phase of the study are variously stated by him but, in substance, are: (1) to bring about the more efficient performance of operating-room personnel by coordinating efforts with the operating-room department and between operating-room personnel and other departmental personnel involved with servicing this department; and (2) to develop a better system of cost controls in an effort to operate the operating room department in a more businesslike manner, while respecting the needs of all professional groups and individuals.

To reach these objectives, it was necessary for an intensive study to be done by the hospital's management engineering department, of all the physical facilities in the operating-room department and the divisions and departments impinging on the operating-room service, such as: the division of surgery, the anesthesiology department, the recovery room, central supply, housekeeping, administration, and nursing.

Spiralling hospital costs and the reluctance to increase hospital rates made it extremely important, writes Wolfe, to set up some kind of cost controls, as well as to find ways to use existing facilities more economically, without jeopardizing the quality of patient care. While observing the current practices, Wolfe and his research staff kept alerted for practices which might shed light on mounting costs and any marked indications of departmental inefficiencies. Their goal was not to find out about the *status quo* only, but to devise and recommend a managerial system which would check excessive expenditures and introduce more efficient methods into the operation of the department.

Wolfe reports that to determine what controls were necessary and how such controls should be set up, he and his staff analyzed when and how the 11 operating rooms in the study were used; how and by whom they were staffed; and the system

*(Continued on next page)*

by which each operative case was scheduled for surgery.

Following this analysis of 5,753 operations performed in 1958, they did a cost breakdown of the total expenditures charged to the operating room department. Every item and purchase of the department that could be was identified, analyzed, and proportionally allocated to all of the operative procedures undertaken during the year under study.

This systematic approach to cost-per-operation resulted in the discovery of a wide discrepancy between actual charges and actual costs to the hospital and revealed a monetary deficit of over $100,000 in the operation of the department.

While studying the department's existing scheduling system for both major and minor surgery, its staffing and supervision patterns, and the usage of the operating rooms during each 24-hour period, Wolfe found: an operating-room nursing staff too large for the number of operations performed; understaffing during the morning hours, overstaffing in the afternoon; overuse of operating rooms in the morning hours, and negligible use in the afternoon, evening, and night hours. This was true of both the operating and anesthesiology staffs. He observed that over 85 per cent of operations were performed between 7:30 a.m. and 1 p.m., which required the department to be staffed with the largest number of personnel working at top speed in the morning, while in the afternoon there was not enough work to keep the staff busy.

One finding, which on the surface would appear most laudable, was that all—surgeons, nurses, technicians—who were involved in the study were concentrating on one single function—patient care. And, according to Wolfe, they were succeeding in giving the finest of patient care. However, he protests without censuring, that administration, which is responsible for the costs and efficient operation of all departments in the hospital, had little voice in this department's expenditures for supplies, personnel, or operating-room usage.

With an administrator's eye on costs, and an industrial engineer's mind for methods analyses, Wolfe, in his recommendations, attempts to reconcile these two interests.

The solution, he suggests, is to increase room usage without increasing personnel. This can be accomplished, according to Wolfe, by adopting a more flexible scheduling system for operations that would permit a more economical utilization of operating-room staff. By more flexible, he means, one that would enable greater use of the rooms over a longer period of time, especially over an eight-hour period. He states that the current practice of top-heavy morning schedules has resulted in costly inefficiencies.

**Maurice D. Wolfe, author of the report, is management engineer and assistant director, The Jewish Hospital, St. Louis. He is supervisor of maintenance, housekeeping, laundry, industrial engineering and personnel. A graduate of the London College of Engineering, London, England, he taught industrial engineering at the University of Louisville, Louisville, Ky., and has been a consultant on cost controls and standards as they relate to hospital management.**

However, to make a recommendation for a revision in scheduling is one thing; to accomplish it is another, for it entails a complete departure from the traditional way of conducting an operating-room department.

Wolfe points out that to obtain a more flexible scheduling system requires that the supervisor in charge of the operating-room suite be delegated sufficient authority to interpret the policies of the chief of surgery, and at the same time, be able to govern the operating schedules to use rooms and personnel to maximum efficiency, without disrupting the interns' and residents' surgical experience on the clinical services.

At present, according to Wolfe's findings, there is no one with this kind of authority to perform this function. The operating-room supervisory personnel either lack the authority or fail to realize the extent of their authority to carry this out.

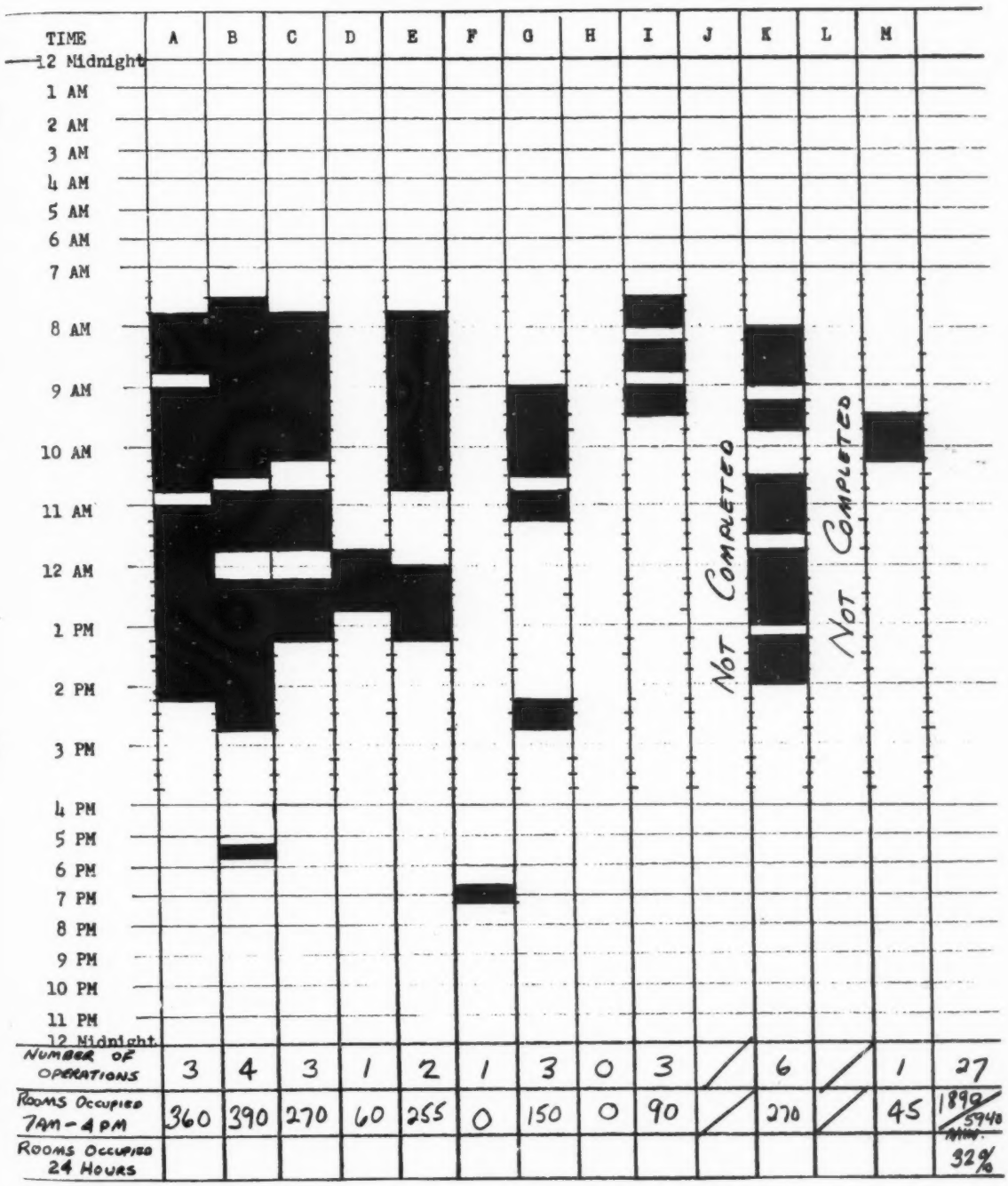
Because operations must be scheduled, delicate working relationships develop among individuals staffing the scheduling office in the operating-room suite, the admitting office, and individual surgeons, Wolfe observes. Also, a rather rigid room-scheduling pattern is set up which results in delays in the operating schedule on frequent occasions. During this study, Wolfe found that the O.R. administrative supervisor could keep the department running efficiently up to a point, but that she did not have, and did not believe she had, sufficient authority to offer a visting surgeon a room assigned to clinical service, even when the room was free.

Wolfe questions whether the traditional position of the nurse supervisor, and its divided responsibility to a director of a professional service and a director of nursing, is suited to the present complex, technical, and expensive operation that characterizes a modern operating room.

In describing the operating-room department hierarchical structure or chain-of-command, he notes: The direction of the professional activities of the surgeons and the assignment of cases to rooms rest with the director of the division of surgery. The responsibility for provision of nursing personnel, instruments, and environmental sanitation rests with the director of nursing. In immediate charge of the operating-room suite is a nurse supervisor who, traditionally, reports administratively to the office of the director of nursing and professionally to the director, division of surgery.

Neither the chief of surgery nor the director of nursing, believes Wolfe, has the background or time to deal with problems of control of personnel, supplies, and equipment, or can handle the needs of individual surgeons, relations with other hospital

## OPERATING ROOM USAGE




departments, and a host of other details that are essentially the responsibility of administration.

Although Wolfe contends that the operating-room department as it is now functioning is overstaffed with nursing personnel, he reports that the O.R. administrative supervisor, as she now performs, can barely keep up with the day-to-day duties and reports for which she is responsible, due to the constant demands from visiting surgeons.

The supervisor of the operating-room department at The Jewish Hospital of St. Louis is responsible for supervising and assigning the nursing-service personnel, including the 15 graduate nurses, a varied number of student nurses, seven surgical technicians, five student surgical technicians, three orderlies, and various aides. The administrative supervisor requisitions and maintains adequate supplies and equipment and all correlated functions. She controls schedules insofar as she can, and interprets administrative directives to the nursing personnel. She studies all technics and setups used in the department and makes recommendations for

(*Continued on next page*)

improvements in the use of supplies, time, and patient care.

Wolfe reports that the individual in this position during the study was a qualified operating-room nurse and supervisor, but that her skills could have been more advantageously used and she could have better fulfilled the responsibilities for which she was prepared, if her duties as an O.R. supervisor and her duties as an administrator had not been combined. He states that this resulted in failure to complete either assignment well.

From what Wolfe and his team have observed, he concludes that someone in the operating-room department must have complete control of costs. He is of the strong opinion that this individual cannot be the O.R. administrative supervisor because she does not make out *all* the requisitions. Only those requisitions for routine supplies go through her, states Wolfe; other than routine requisitions are processed through the office of the director of surgery.

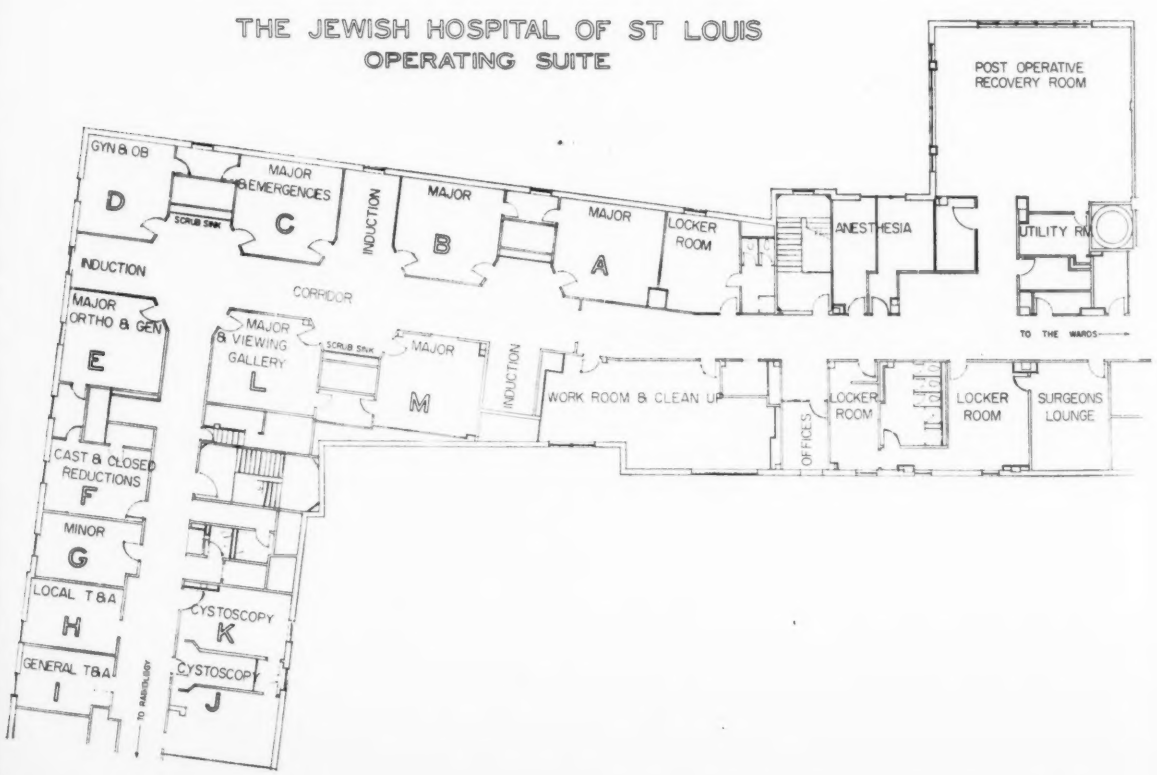
However, Wolfe writes that he discovered that neither source has any idea of the costs of these supplies or equipment, nor keeps a complete record of purchases and prices.

Apparent to Wolfe was the lack of a clear and definable line of authority and the delegation of that authority from the chief of surgery to the operating-room supervisors. He describes as unenviable the position in which operating-room supervisors are placed. As nurses, he writes, they are directly responsible to the director of nursing. But as operating-room supervisors, they are answerable to the chief of surgery. Also, they are at the beck and call of all the visiting surgeons, with the result that a significant portion of their morning time is spent answering calls and running errands. He concludes that administratively all of these factors are costing too much to be ignored.

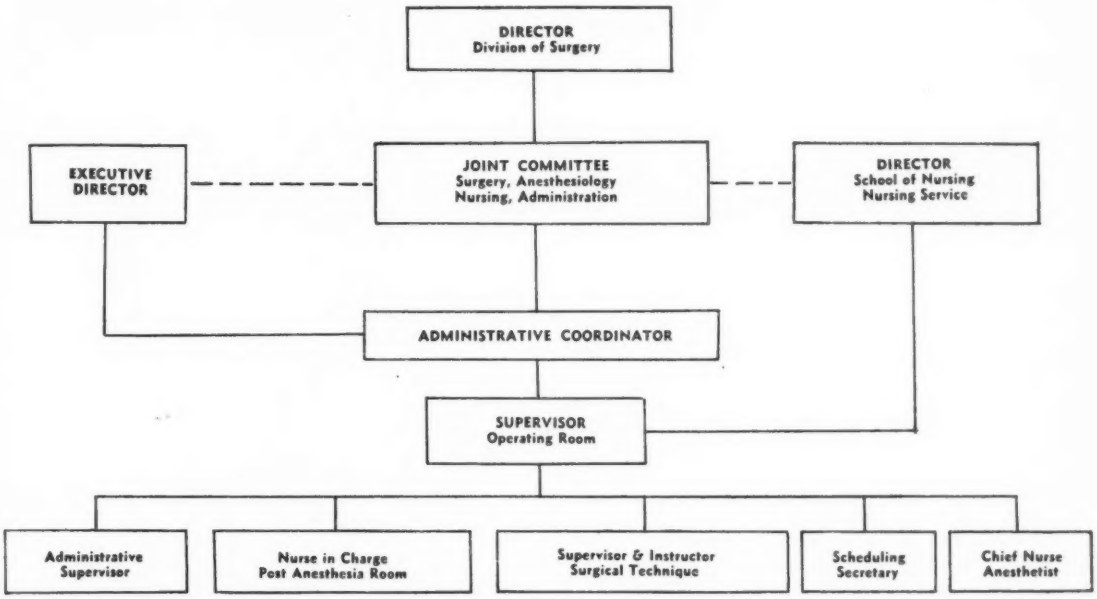
Is there a solution to this professional-administrative dilemma? Wolfe believes so. He recommends that a person be appointed to the operating-room department with the title "administrative coordinator" or "administrative supervisor"—titles he uses interchangeably. He suggests that the administrative coordinator be given the authority to supervise all functions carried out in the operating and anesthesiology departments with the objective of attaining the greatest use of operating rooms and operating personnel. (At one point in his report, he refers to this position as being filled by a lay coordinator but makes no further references to this as a recommendation.)

To help the administrative coordinator to carry out these stated functions, Wolfe proposes the appointment of a joint committee comprised of three representatives—one from the division of surgery, one from the department of nursing, and the administrative coordinator, representing administration. These three would have the authority to resolve questions of policy and matters concerning their respective departments.

Originally, Wolfe had described the first two representatives as coming from the assistant direc-



## OPERATING ROOM DEPARTMENT ORGANIZATIONAL CHART




tor level, but later he verbally amended this recommendation, stating that they should be the chief of surgery and the director of nursing. He believes now that this would give the operating-room department true representation in nursing, anesthesiology, surgery, and administration.

In his mind's eye, Wolfe envisions the administrative coordinator giving administration a clear, unbiased monthly report of the operating-room department activities; acting as a control on expenditures for supplies and equipment; tranquilizing high-spirited operating-room personnel; raising the staff's collective morale; and by so doing, offsetting the administrative expense of the additional salary required for the newly created position.

The job description of such a position might read:

- Controls all administrative services of the operating-room department, and through the director of surgery, controls the surgical schedules so as to make the most of room availability.
- Checks the daily operating reports.
- Is responsible for the daily charting of the room usage.
- Processes all requisitions and effects savings in purchases of supplies.
- Investigates better usage of materials and supplies.
- Handles relations with other hospital departments which are related to the O.R.
- Works with two other people with sufficient authority to resolve any problems which arise regarding policy or procedure.

In essence, Wolfe's report on his study is a persuasive argument to support his belief that increased flexibility in operating-room schedules, more stringent cost controls, and better utilization of operating-room personnel are needed to substantially reduce the operating-room department's monetary deficit.

To illustrate the advantages of his proposal to revise the surgical scheduling system rather than reduce the number of nursing personnel, Wolfe cites these comparative projected figures: To reduce the operating personnel by two staff nurses would result in a saving of $7,000 a year, whereas by increasing room usage by 10 percent, it is possible to realize at least $25,000 saving a year. And, if his recommendations were adopted in toto (see April issue of HOSPITAL TOPICS), it would be possible to increase this amount to approximately $50,000 a year. According to his theory, a revised scheduling system would result in more available room space, 2,000 additional operations a year, and better utilization of personnel, and would practically eliminate the departmental deficit.

*(The second part of this review of the report, which will go deeper into industrial engineer Wolfe's room usage study and recommended cost controls, will be published in the April issue of* HOSPITAL TOPICS. *Meanwhile, readers attending the 7th National AORN Congress in New York City, February 22-25, will have the opportunity to query Mr. Wolfe personally if they wish as he is participating on the Wednesday afternoon panel entitled "The Future Role of the Operating Room Nurse," moderated by Miss Clarke.)*

# Casts, Bone Grafts, Therapy Featured

TOPICS *presents abstracts of selected papers from the American Academy of Orthopaedic Surgeons meeting, held in Chicago, January 23-28.*

***Casts, Bone Grafts***

## Proper Treatment Essential In Scaphoid Fracture

A painful and disabled wrist may result from poor treatment of a fractured scaphoid, or navicular, bone.

Tenderness in the region of the navicular, especially after a fall or a blow, may be a sign of fracture. For accurate diagnosis, four different x-ray views are needed. Even if no definite x-ray findings are apparent, a cast should be applied for two weeks, since there may be a splintered-bone condition not readily seen.

Of 220 fresh navicular fractures treated over a three-year period, only six did not unite. These required bone grafts. A cavity is formed by chiseling out the hardened bone ends, and multiple small bone chips are packed into it.—*Prof. Otto Russe,* Vienna, Austria.

***Plastic Casts***

## New Study Method Reveals Vascular System in Bone

The total vascular beds of 90 bones from 11 extremities were injected with methyl-methacrylate and the bone tissues were removed by chemical means. The semi-transparent plastic material was unaffected by the corroding chemical action, leaving an interior cast of the vascular system.

All of the bones used in the study were obtained from individuals who suffered traumatic amputation, or whose extremity was removed surgically for reasons other than vascular insufficiency. They were injected within a few minutes of amputation, before clotting began, and warm normal saline solution was first injected into the arteries to clear the bone part of all blood.

The generally accepted view had been that the spatial relationship of arteries and veins in bone duplicates the relationship in other tissues of the body. However, structure of the casts obtained shows that either one vessel or the other is present in the Haversian canals.

Companion arteries and veins are associated only in the superficial layer of the periosteum. Elsewhere in the bones the two systems approximate each other only by chance. In no case was more than one vessel seen in a Haversian canal.—*John G. Nork, M.D.,* Travis Air Force Base, Calif.; *James B. Wray, M. D.,* Winston-Salem, N. C.; *William Jones, M.D.,* Durham, N. C.; *Joseph Markee, Ph.D.,* Durham, N. C.

***Rigid Foam***

## Poured Liquid Plastic Used in Fracture Fixation

A liquid plastic which hardens into a strong solid has been developed and used in the treatment of fractured and diseased bones. The plastic possesses the proper qualities of strength, osteogenesis, nontoxicity, cohesiveness and ease of handling at surgery necessary for maximum efficiency in bone fixation.

Called Ostamer, it provides a chemical lacunar system. New bone not only grows along the surface, but also through the plastic, as in the case of an autogenous graft. This form of fixation permits earlier ambulation of the patient and more rapid return to physiologic norm than do other forms of treatment.

Fracture of the femur is ideal for Ostamer fixation because of the abundance of muscle and soft tissue covering the femoral shaft, and because of the size of the medullary canal of the femur. Ostamer can be placed within the medullary canal, reinforced if necessary by intermedullary support, and further supported by a reverse inlay graft. An additional pour of Ostamer can be applied to the outer cortex.

When infection is present Ostamer remains unaffected and permits bony union, as long as weight bearing is continued. In one case studied, the infection was so virulent that the inlay graft was completely sequestrated, but the plastic was undisturbed and union was obtained.—*Michael P. Mandarino, M.D.,* Philadelphia; *Joseph E. Salvatore, M.D.,* Memphis, Tenn.; *Thomas L. Jones, M.D.,* Cincinnati.

***Skill, Care Important***

## Wire Fixation Failure Due To Improper Application

Wire fixation of a fracture is sometimes held in disrepute, perhaps because the method is blamed as an excuse for poor application of the fixation.

# At Orthopaedic Surgeons' Meeting

Incorrect application will result in erosion of bone and subsequent loosening of the loop.

The lesser bulk of wire fixation material and the smaller wound necessary for its insertion are definite advantages of the method, particularly where postoperative infection has developed.

Fixation by this method should frequently be supplemented by a plaster cast. In such cases, casts can be removed early, permitting joint motion sooner.

A major problem posed by the wire loop method is the tendency of the wire to break in twisting. A tightener-twister has now been developed that utilizes a calibrated spring. This spring is attached to the wire in such a way that the tension on the wire can be kept uniform, even while twisting.

In fastening adjacent ends of bone fragments by a single wire loop through two drill holes, as in the case of an open fracture where a minimum of internal fixation material is desired, there is often difficulty in bringing the end of the heavy wire up from the medullary cavity through the second drill hole. This obstacle can be eliminated by threading a double piece of light wire from the outside of the bone through the second drill hole and drawing the heavier wire up.—*Frederic W. Rhinelander, M.D.,* Cleveland, Ohio.

***Muscles Released, Reattached***

## New Operative Procedure Corrects Congenitally High Scapula

A new operative procedure has been devised to aid in the correction of the congenitally high scapula. Six cases have been studied, patients ranging in age from four to 14.

The procedure involves detaching the origin of the upper two-thirds of the trapezius and rhomboids major and minor from the midline. The superior angle of the scapula is nipped off without stripping and the omo-vertebral bone, or limiting band, removed. The levator scapulae muscle is also released in the removal of the tip of the superior spine.

The scapula is then depressed and the muscle sheet sutured at a lower level as in the closure of any laminectomy. The fold created inferiorly at about dorsal 9 is overlapped or plicated.

Excellent shoulder function and mobility are maintained. In the cases studied, there has been no regeneration of bone or recurrence of the deformity.—*Joe W. Woodward, M.D.,* Waco, Tex.

***Increases Mobility***

## Lumbar Sympathectomy Reduces Pain for Arthritis Sufferers

Extended lumbar sympathectomy has been utilized in the treatment of arthritis patients for whom relief of pain in the hip or knee could not be obtained by bed rest, weight reduction, traction, physical therapy, cortisone, or pain relievers, including codeine.

The surgery consists of an ipsolateral retroperitoneal resection of the lumbar sympathetic trunk from the common iliac vessels to the second lumbar vertebra encompassing accessory ganglia on the rami and also the decussating fibers in the retroaortic prevertebral plexus.

This operative technic, used on middle-aged and elderly arthritic invalids, has exhibited no morbidity or mortality. In the immediate postoperative period, the patients have consistently shown improvement in joint mobility along with the relief of pain.

Follow-up of patients has extended over periods as long as four-and-one-half years. Relief from pain and increased mobility have been maintained. There have been no undesirable effects after the surgery; neuropathic disorganization of the joints has not occurred.—*Robert Herfort, M.D.,* White Plains, N.Y.

***Dramatic Change***

## Enzyme Therapy Speeds Healing in Infected Orthopedic Wounds

Twenty-one of 30 cases of serious infection following orthopedic procedures were treated successfully with the enzyme fibrinolysin. These 21 cases are especially noteworthy, because of the seriousness of the infections. In many, enzyme therapy was instituted as a last resort, when many other forms of treatment had failed.

Four out of the five patients with a prosthesis replacing the femoral head had complete healing, despite the fact that the prosthesis was, at least in two instances, exposed in the infected wound.

Eleven of the 30 patients had chronic resistant osteomyelitis. Seven healed completely with fibrinolysin and two had secondary surgical procedures when the wounds were clean seven days and 30 days after enzyme therapy was started.

*(Continued on next page)*

The effectiveness of the enzymes on debridement and healing is almost directly proportional to the age of the infection. The older the wound, the longer it will take to obtain healing. Wounds packed with fibrinolysin at the time of incision and drainage will be found to be clean with pink walls in 24 hours or less. These wounds also heal rapidly. The 30 cases reported here were almost all old, some over a year in duration, and were therefore, in general, resistant to treatment.

Human fibrinolysin as a debriding agent has many advantages. It does not irritate, and does not destroy partially devitalized tissues. Although not as potent as trypsin, chymotrypsin, or papaine, it has a prolonged activity.—*Eugene E. Cliffton, M.D.*, New York, N. Y.

***Patient's Attitude Helps***

## Deformity Correction Possible, Needed, in Cerebral Palsy Cases

Surgical correction of foot deformities in the cerebral palsy patient who is also mentally retarded should not be denied for reason of the mental deficiency.

Corrections of talipes equinus, including subcutaneous Achilles lengthening, open Achilles lengthening, Vulpius-Baker lengthening, stirrup tenotomy, popliteal neurectomy, soleus neurectomy, and others, have been used in cerebrally palsied children, with varying degrees of success.

It is unwise in most instances to operate on children below age four. They are too young to cooperate or to follow accurately or with regularity the physical regimen required. Cooperation of the patient in training sequences, his motivation, and the family participation in the total program are vital factors to be considered in the proper timing of surgery.

Intelligence is not always the influencing factor. The inward determination of the child to improve is the important matter and this may be found in a mentally retarded child and be absent in one of high intelligence. — *Carl D. Martz, M.D.*, Indianapolis, Ind.

***Other Symptoms Absent***

## Painful Shoulder May Be Sign Of Apical Lung Cancer

Patients complaining of persistent pain in the shoulder, arm, or neck, should be given an x-ray that includes the peak of the lung. In a great many cases of apical lung carcinoma, the initial symptoms are referred to the shoulder. Many cases have been treated for months for some obscure condition of the shoulder, when the pathology was really in the lung.

Unfortunately, an ordinary chest x-ray will not always result in a correct diagnosis. Thickening of the pleura at the apex or insignificant lung infiltration may be overlooked or mistaken for a quiescent infection.

One patient in the study, a 59-year-old man, had been injured in an auto accident. When pain in the right shoulder and neck became steadily worse, x-rays of the shoulder, neck, and chest were made and a diagnosis of arthritis was made.

Several weeks later he returned to the hospital, having had no relief from pain. His earlier x-rays were reviewed, and new films were taken with the spine in a curved position. Apical lung tumor was diagnosed and the upper lobe of the right lung was removed, having been found cancerous.

Lung cancer is increasing in incidence. It is important that the orthopedist recognize this fact and be especially thorough in examination of those in the cancer age group, since there may be associated benign bone or joint problems which will divert attention from the true cause of the patient's pain.—*Paul E. Dee, M.D.; R. Glenn Smith, M.D.; Miles Gullickson, M.D.; Charles Ballinger, M.D.*; Rockford, Ill.

***$S^{35}$-Sulfate***

## Radioactive Sulfur Shows Promise As Chondrosarcoma Therapy

Tracer doses of $S^{35}$ have an affinity for cartilaginous tumors. The epiphyseal cartilage can be destroyed in experimental animals by large amounts of the material. Based on these findings, an attempt was made in a series of cases to treat unresectable chondrosarcomas by injecting large amounts of radioactive sulfur, $S^{35}$-Sulfate.

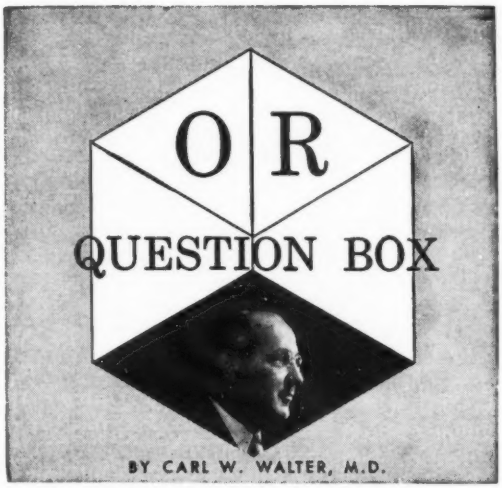
Three patients received divided intravenous injections totalling 559 to 926 millicuries up to a leukopenic effect.

Three cases were treated in this series. One, a 59-year-old woman, had a chondrosarcoma in a rib which had recurred following surgery. The second patient was a 63-year-old woman with a large chondrosarcoma surrounding the thigh bone. The third was a 43-year-old man with a recurrent chondrosarcoma of a rib.

In the two women patients the progress of the tumor appeared to be reduced for several months following injection.

Microscopic examinations and analyses of numerous tissue specimens revealed that the chondrosarcomas treated received an average irradiation dose from 30 to 60 times as high as the concentration in the blood. The growing portions of the tumor received irradiation doses well above 4,000 rad.

Therapeutic attempts using the isotope must be limited to chondrosarcomas which are not amenable to surgery. Large doses of the radiation may result in blood disorders. — *Raymond Gottschalk, M.D.*, Martinsburg, W. Va.




Assisted by Dorothy W. Errera, R.N.

*Q. Our surgeon would like to know how blood loss should be determined during surgery.*

A. Measuring blood loss during surgery can be a complicated procedure or can be a fairly simple procedure depending on how accurate a measurement one wants and how well qualified the operating room personnel are who are charged with the responsibility. Radioactive isotopes may be used or special suction apparatus. In one simple method, blood in the suction bottle is measured and blood in discharged sponges is measured. Your surgeon will find descriptions of blood measuring technics in his professional journals and can make a choice depending on his surgical technics or philosophy of blood replacement.

*Q. What do you think of the use of old newspapers from all over the hospital for lining kick buckets in the operating room?*

A. Newspapers often travel from patient to patient indiscriminately and come to rest in the darkest and dirtiest corners of hospital utility rooms. They are often wet, warm havens for insects and bacteria. Kick buckets in the operating room should be lined with waterproof paper bags that will confine waste, both wet and dry, and make safe disposal and handling a reality.

*Q. How many basins should be the maximum in a basin set?*

A. You can put as many basins as you like in a set. Be sure they are nested loosely enough to allow steam to reach all surfaces and be sure they are *all* positioned in the sterilizer so that no air is trapped.

*Q. Do you think it is a good idea to have a different linen pack for each service?*

A. What you do about linen packs depends on your own experience and what is efficient for your organization. Standardization wherever possible makes for economy in purchasing and handling; and safety where a large number of ever-changing personnel are concerned.

*Q. In all operating rooms I have worked in, we always have to wait at least 12 to 18 hours before using catgut suture tubes after jars have been refilled. This is also the routine for knife blades and I am wondering if we must wait the 18 hours when so many other things like dematome blades are only soaked 20 minutes using the same or even less powerful germicides?*

A. If you are interested in total destruction of bacteria, you wait the 18 hours.

If you use an improved germicide containing hexachlorophene, time can be cut to 3 hours.

If you are interested in patient and personnel safety, you abandon chemical disinfection entirely except for use with new, unused, non-heat-stable bits of equipment.

If you are interested in economy and best use of your valuable time, you recognize there is little justification in avoiding the use of modern, prepackaged, pre-sterilized blades and suture materials offered by many manufacturers.

*Q. How do we ask the surgeon for a sponge count as the peritoneum is about to be closed? We have been saying . . . "Dr., do you have "x" number of sponges on the table?" . . . but many of our surgeons feel that the doctor is not participating in the count if asked in this way and could not be held legally responsible for a wrong count.*

A. The patient's recovery is the surgeon's responsibility regardless of the jargon used for a sponge count. It is my own feeling that all sponges should be removed from the field as the peritoneum is about to be closed, counted and the field rehabilitated with clean sponges.

*Q. Is it necessary to wear a mask at all times in the operating room even between cases when getting ready for the next? Is it necessary for student nurses to wear masks when cleaning rooms at the end of the operative schedule? Is it necessary to wear masks when stocking the rooms for the following day?*

A. Everyone wears a mask at all times in the operating rooms proper. Breathing and talking are full-time activities and with expired air, there are droplet nuclei containing bacteria. These settle out of the air to the floor and other horizontal surfaces. They multiply and are scuffed back into the air by activity and ventilation. Then, they are inhaled by unmasked personnel or settle out on exposed sterile surfaces and so the cycle continues.

*Q. I have recently assumed charge of our supply room. One thing that bothers me is the staples used to close cellophane packages of sterile tubing. Am I wrong in thinking these are dangerous from the point of view of contamination?*

A. Stapling is an inferior method for closing sterile packages. Staples rip out and make holes that invite contamination. A paper clip over the end through which the sterile item will subsequently be removed is a lot more logical and safer to use.

*(Continued on next page)*

*Q. Is there any system of charging for suture materials in surgery or a schedule for minimum and maximum amounts of sutures to be used? We feel that some of our surgeons use too much suture material and too many sponges. Perhaps, if they were charged for any used over a given number, they might cut down on waste.*

A. The surgeon remains the boss but this is not to say that he cannot be approached for a discussion of what appears to be his abuse of economy. Such a matter is usually best handled by the chief of surgery after you provide him with good evidence to show that one surgeon uses an amount of suture material unrelated to the amount used by another surgeon for the same procedure. Often, the scrub nurse can control this problem by cutting sutures to practical but not excessive lengths. If you can document your suspicions of needless waste, it may be indeed easier to charge the surgeon rather than make changes in a life-time of suturing technics.

*Q. Should soiled linen in the operating room be saturated with germicide before going to the laundry?*

A. Soaking linen is a sloppy technic – seldom accomplished without contaminating the surrounding environment and the persons involved. Because of the adsorptive properties of many germicides, the technic is not consistently effective in destroying organisms.

Contaminated linen is handled best in the laundry. Any washroom using wash temperatures up to 160°F. and a good wash cycle with built soaps, alkali, sour and germicide can process such linen without any threat to personnel or subsequent loads of laundry. The control begins with collecting all soiled linen in bags which are intact, which are of a size compatible with the opening of wash wheels, which can be snugly closed. The familiar gross canvas bag, riddled with holes and with its contents overflowing, has never been an asset in communicable disease control. In the laundry, soiled linen is dumped directly in the wash wheel. The bag follows. Personnel concerned have to be oriented to the need for protecting washers from contamination with pieces of renegade linen and for protecting themselves with gowns and gloves – the latter also added to the washer after loading.

*Q. Is it necessary to wear a mask at all times in the operating room proper as for instance between cases when getting ready for the next case; or when a student nurse cleans a room at the end of the schedule or when stocking the rooms?*

A. Masks are worn by everyone at all times in the operating room proper. Breathing and talking are full-time activities, and with expired air, there are droplet nuclei containing bacteria. These settle out of the air to the floor and exposed horizontal surfaces. If surface sanitization is not a daily routine, these bacteria multiply and are scuffed back into the air by activity and ventilation. They are then free to be inhaled by unmasked personnel or to settle out again on exposed surfaces.

*Q. Would you suggest saturating sponges and waste before incineration?*

A. Again, the handling and sorting incidental to preliminary soaking of soiled material only introduces more hazard. Waste is discarded directly into waterproof bags. The latter are closed snugly and either discarded directly into an incinerator or into a covered container which is plainly marked for contaminated material. The porter transporting these containers for incineration should know the potential hazards of his job and be supervised in handling the material. The single use, disposable waste containers offer the ultimate in safety in waste collection and disposal.

*Q. Do you think that electric dryers might harbor bacteria as well as cause increased circulation of bacteria when the fan is in motion?*

A. In a dirty environment, the fan would certainly stir up dust from the floor but this objection is defeated if good housekeeping is routine. It is unlikely that the dryer itself would support bacteria because of the high temperatures of the heating coils.

*Q. Is it acceptable for scrub nurses in delivery to wear plain wedding bands while scrubbing?*

A. You have only to remove a few wedding bands at randon and examine the collections of dirt, epithelium and grease to be convinced that they represent potential sources of contamination. The nurse scrubbing for obstetrical work has no less a bacteriological problem than the nurse scrubbing for surgery and no less a responsibility for the patient whose recovery may depend on attention to these minutae of aseptic technic.

Wedding bands and watch straps on nursery personnel are similarly potential sources of trouble.

*Q. Don't you think telephone mouthpieces are heavily contaminated?*

A. These are traditionally recognized reservoirs of bacteria. Alcohol wiping is almost a routine.

*Q. Would you describe the technic for culturing the floor?*

A. Have your shop make a template of either steel or aluminum. This is a rectangle of metal heavy enough to make good contact with the floor with a 5 cm. opening. Sterilize the template at 250°F. for 30 minutes. Place the template on the floor. Scrub the area within the opening for 30 seconds with a swab moistened in buffer solution. Twirl the swab in 5 cc. of Butterfield's buffer. The bacteriologist then cultures 1 cc. aliquots on nutrient agar pour plates. If cleaning agents containing either hexachlorophene, a quaternary ammonium compound, or iodine have been used on the floor, a neutralizer must be used in testing.

## SELECTED BIBLIOGRAPHY

By Dorothy W. Errera, R.N.

Chavan, Shankar B., King, John Harry, Jr., and Cummings, Edward J.: "Eye Bank – Procedures for Obtaining, Processing and Sterilizing of Donor Eyes in Neosporin. Part 2." *Bull. Georgetown U. Med. Center* 12:111, January 1959.

Donor eyes must be enucleated in the operating room with full asepsis to prevent transmission of infection to the recipient. As soon as some responsible person has obtained permission for enucleation, all effort should be made to remove the eyes within six to seven hours of death. If the eyelids have been properly closed and the body has been refrigerated, a delay, never to exceed 12 hours, may be tolerated.

In the operating room, the entire eye area is prepared with a detergent germicide and an iodophor tincture. A sterile applicator saturated with a wide-range antibacterial eye solution is used to clean eyelashes. Surgical drapes are applied. The eyelids are opened, and the cornea and conjunctival sac are irrigated with sterile normal saline. Neosporin eye drops are instilled; enucleation is completed without causing any facial disfigurement.

It is imperative that the corneal epithelium be protected at all times from drying and ulceration, to minimize the possibilities of infection.

Cultures are taken before the eyes are irrigated generously with sterile normal saline. The enucleated eyes are examined under a slit-lamp microscope and evaluated. Each eye is then immersed (corneal surface upwards) in separate containers of antibacterial ophthalmic solution for 15 minutes.

The most common contaminants in donor eye cultures were *S. aureus*, pneumococcus, *S. hemolyticus*, meningococcus, and *P. aeruginosa*. In 100 cultures, 77 were positive and 23 negative. All organisms were destroyed after 15 minutes immersion in Neosporin. No effect could be noted on the epithelial layer.

After sterilization, each eye is placed on a layer of sterile gauze or cotton saturated with sterile normal saline and placed in a sterile bottle. The bottles are refrigerated at 6° C.

The eyes may be transplanted immediately or stored for future use.

Prather, George C., And Sears, Bernard R.: "Pyelonephritis - In defense of the urethral catheter," *J. A. M. A.* 170: 1030, June 27, 1959

Analyzing data and sentiment implicating the urethral catheter as the villain in urinary tract infection, the authors conclude the patient's general state of health and the absence of tissue debilitation probably contribute more to the incidence of infection than the *properly* used catheter. The latter, they point out, remains "one of man's best friends."

The admonition for "proper use" includes a discussion of facilities. They note that cystitis appears to be less frequent in office or clinic patients where catheterization is done with the patient in good position on a firm examining table, with good exposure, good light, and with usually two people cooperating to keep asepsis a reality rather than a supposition.

Jackson, Chevalier L.: "Should Patients Be Hospitalized for Peroral Endoscopic Procedures?" *Ann. Otol., Rhinol. and Laryng.* 68:596, June 1959.

At Temple University, patients scheduled for direct laryngoscopy, bronchoscopy or esophagoscopy are not routinely admitted to the hospital; neither are patients scheduled for a first endoscopy.

Children are admitted to allow for premedication and control. The apprehensive, nervous, elderly or debilitated patient is admitted, as are the patients with fever or history of recent hemorrhage and the patient with difficult anatomy.

If general anesthesia is to be used, the patient is always ad-

(*Continued on next page*)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mitted. Admission for removal of a foreign body depends on the nature and location of the body and the degree of dyspnea experienced by the patient.

MacPherson, C.R.: "Oxygen Therapy – an Unsuspected Source of Hospital Infections?" *J.A.M.A.* 167: 1083, 1958.

An apparently well-organized, clean, efficient oxygen-therapy service in a large teaching hospital was investigated to either confirm or deny the likelihood of contaminated oxygen-therapy apparatus.

Attachment and pressure-release valves were essentially sterile; delivery tubing for the patient was clean, showing only an occasional *S. albus* or diphtheroid; *but* water reservoirs and oxygen inlet and outlet ducts were heavily contaminated.

Distilled water was heavily contaminated. It was discovered that the distilled water carboy was not regularly cleaned or disinfected, and distilled water only one day old contained as many as 2,000 organisms per milliliter. The siphon used to withdraw water from the carboy was contaminated; the water bottle used for replenishing units and the residual water in units were similarly loaded with bacteria.

Organisms were primarily nonpathogenic, but the dangerous contaminants present were sufficiently awesome to inspire a clean-up program. These rules are now followed:

1. All water used in humidifying equipment is dispensed from sterile flasks of sterilized distilled water.

2. Apparatus is changed after one week of use.

3. Humidifiers are completely emptied each time before replenishing.

4. Glass reservoirs are cleaned and disinfected terminally after one week of use.

5. Rubber washers are replaced as soon as signs of wear are noted.

6. All heat-stable parts are autoclaved terminally and after a week of use.

7. All apparatus is cleaned, disinfected and dried before storage and protected from dust and air-borne contamination while in storage.

8. Disposable tubing is used wherever possible.

9. Bacteriological monitoring is routine.

Chemical disinfection of outlet ducts on the humidifiers was less than satisfactory, and old units are being replaced with models which will withstand steam sterilization.

*ED. NOTE: An article of interest to operating-room and recovery-room nurses, entitled "Possible Role of Humidifying Equipment in Spread of Infection from Newborn Nursery," appears in the Pediatrics department in this issue, beginning on page 69.*

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# An Effective Cardiac Resuscitation Program

By L. Brent Goates*

A case or two of cardiac arrest – a rather rare but continuing threat to all surgery – inspired a noteworthy educational program among surgeons and operating-room nurses at the Latter-Day Saints Hospital, Salt Lake City, Utah.

Medical staff members, not satisfied with the outcome of these few cases of arrest, were determined to improve their methods of coping with this type of emergency. The president of the medical staff appointed a committee to study the problem and make recommendations.

After a number of meetings, this special committee, headed by W. Ray Rumel, M.D., thoracic surgeon, and including a cardiac research physiologist, an anesthesiologist, and a general surgeon, developed the "Cardiac Resuscitation Chart."

Five hundred copies of the chart were printed, and some were distributed to selected hospitals. Doctors at these hospitals "spread the word" about the chart to physicians at other hospitals. As a result, many requests for copies have been received from physicians and hospitals throughout the country, and the supply is now exhausted.

Several important changes have been made in the chart by the cardiac resuscitation committee, and a second printing is now under way.

[The revised version is reproduced in the special insert opposite page 98, in slightly less than actual size, with the thought that readers may wish to remove it and hang it in their operating-room suites. – *THE EDITORS.*]

In the Latter-Day Saints Hospital, the chart is framed and hung over the scrub sinks, so that surgeons can see it while they are scrubbing up. Copies are also displayed in the surgeons' locker room and in the doctors' lounge.

The chart was just the beginning project for the committee, which sees its mission as a continuing educational program among surgeons and nurses – all of whom might at any moment find themselves in a situation in which their anesthetized patient's life is in jeopardy because of cardiac arrest – and only four minutes remain in which to alter the fatal course. The economy of time and the pursuit of correct action in this crisis most often determine whether the patient will survive.

The need for immediate action argues for complete staff preparation in advance of the emergency. Surgeon and anesthesiologist should be prepared, so that they can proceed immediately while the chest surgeon is being sent for. Chest surgeons and others best prepared logically take the lead in encouraging all staff members to learn how to meet the situation promptly.

As a second project the committee arranged for a practical practice experience for physicians to master the technic of cardiac massage. A unique and clever display was created by Dr. Rumel and his associates, using a fresh pig's heart hooked to a calibrated tube of red-colored fluid (colored water is used and a thickening substance is added). The tube registers the squeeze pressure of each contraction by the participating physician.

The exhibit gave some 250 physicians at the annual meeting of the Utah State Medical Association last fall an opportunity to squeeze the heart under conditions almost identical to those in human beings undergoing cardiac arrest.

With each doctor practicing for five to six minutes, five pigs' hearts were worn out in three days, and the exhibit "stole the show" at the meeting.

Each physician attempting the exercise donned white cotton gloves, which are now standard sterile equipment in the cardiac arrest tray maintained in surgery at the hospital. The advantage of cotton

(*Continued on next page*)

*Mr. Goates is assistant administrator, Latter-Day Saints Hospital, Salt Lake City, Utah.

CARDIAC RESUSCITATION
PROGRAM of ACTION
COMMITTEE ON CARDIAC RESUSCITATION
Dr PAUL D. KELLER
Dr SCOTT M. SMITH
Dr HOMER R. WARNER
Dr W. R. RUMEL, CHAIRMAN
TREATMENT
OF
CARDIAC ARREST
MUST BE PRE-PLANNED SWIFT AND EFFICIENT!
CEREBRAL CIRCULATION MUST BE RESTORED WITHIN 4 MINUTES! THIS ALLOWS NO TIME FOR STUDY OR EXPERIMENTATION.
DELAY IS RESPONSIBLE FOR 85% OF FAILURES!
MAKE PLANS TO SUCCEED
1. BEGIN YOUR ORGANIZED PLANNING TODAY
2. REHEARSE YOUR PLAN EACH TIME YOU SCRUB
3. PRACTICE CARDIAC COMPRESSION AT REGULAR INTERVALS
* MAY BE OBTAINED FROM LATTER DAY SAINTS HOSPITAL SALT LAKE CITY, UTAH
• KEEP DRUG THERAPY SIMPLE DURING AND AFTER RESUSCITATION!
• MOST HEARTS ARE BASICALLY NORMAL.
• REMOVE THE CAUSES OF ARREST AND NORMAL FUNCTION WILL RETURN.
• RESERVE DRUGS SOLELY FOR SPECIFIC SYMPTOMS OR CONDITIONS
• IF DOUBT EXISTS — SEEK CONSULTATION!

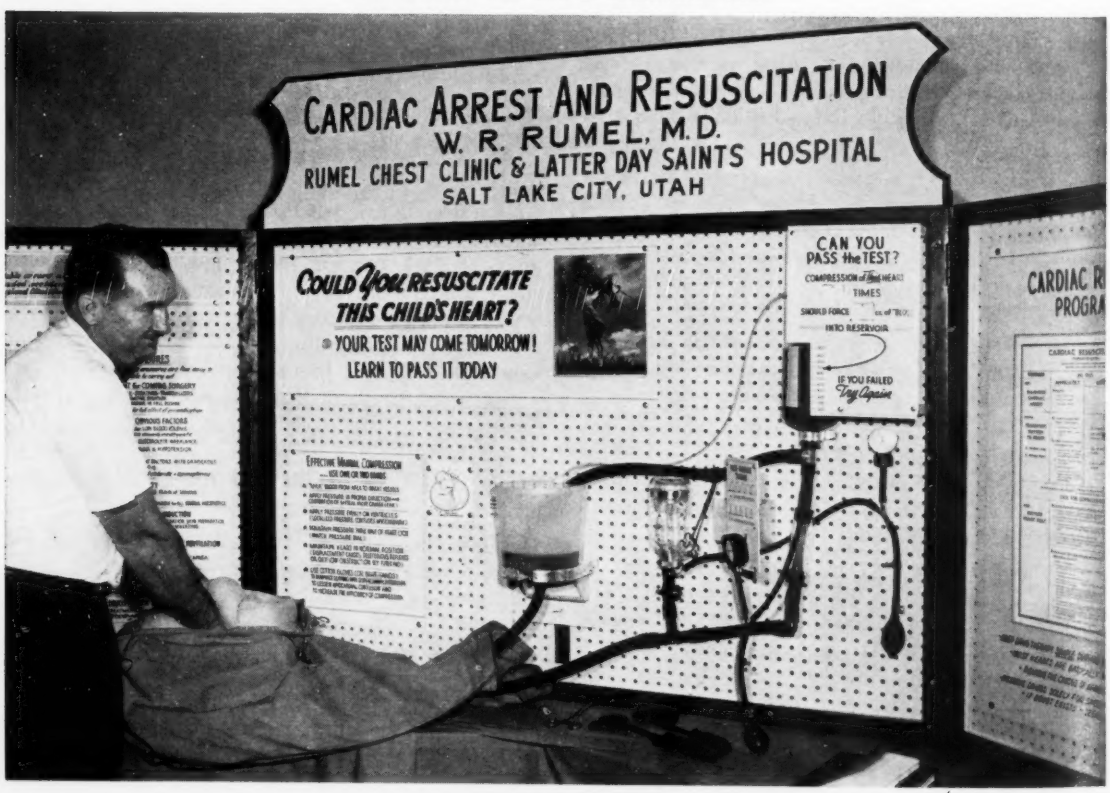
**RESUSCITATION PROGRAM continued**

gloves over the conventional rubber gloves is that they prevent the heart from slipping out of the hands of the surgeon, but still permit the doctor to maintain the "feel" of the organ — an aspect which is just as important as the pressure applied.

It has been demonstrated that the physician massaging the heart has to reach a certain minimum pressure to provide sufficient pulsation to circulate the blood. An interesting finding at the convention was that many physicians had some difficulty reaching this pressure and therefore would not have been effective in dealing with cardiac arrest in a human being. Many had never felt a live heart before, and thus didn't know just what was required of them.

Plans are being formulated to show the exhibit at other state medical association conventions and at the annual meeting of the American College of Chest Physicians in Miami next June. In between such appearances the exhibit will be installed as a permanent display in the hospital's cardiovascular research area, where constant educational value may be derived by members of the hospital's medical staff.

**Conventioneer tries skill at resuscitation test.**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COULD YOU RESUSCITATE THIS CHILD'S HEART?
YOUR TEST MAY COME TOMORROW!
LEARN TO PASS IT TODAY
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IF YOU FAILED Try Again
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# CARDIAC RESUSCITATION

## PROGRAM OF ACTION

W. R. Rumel, M.D., Chairman
Paul D. Keller, M.D.
Scott M. Smith, M.D.
Homer R. Warner, M.D.

Recommended by The Committee on Cardiac Resuscitation
Latter-day Saints Hospital, Salt Lake City, Utah

May, 1958
REVISED FEBRUARY, 196C

| PROBLEM | DO THIS | | AVOID THIS |
|---|---|---|---|
| | **IMMEDIATELY** | **LATER** | |
| **FIRST**<br>**DIAGNOSE CARDIAC ARREST** | **Recognize:**<br>Absent Carotid Pulse<br>Absent Heart Sounds<br>Absent Blood Pressure | | **DON'T** squander the four minutes you have to restore function.<br>**DON'T** feel for pulse in small peripheral arteries.<br>**DON'T** prolong search for blood pressure or heart sounds.<br>**DON'T** use ECG. |
| **SECOND**<br>**TRANSPORT OXYGEN TO BRAIN**<br>**A. Ventilate Lungs**<br>**B. Massage Heart** | **A. Ventilate Lungs — Positive pressure**<br>1. 100% oxygen-mask with bag.<br>2. Mouth-to-mouth breathing (if oxygen is unavailable)<br>3. Provide and maintain clear airway.<br>**B. Restore Circulation by Manual Compression of Heart (Massage)**<br>1. Open left chest between ribs from sternum to midaxilla just below nipple or breast.<br>2. Cut adjacent cartilages lateral to sternum.<br>3. Spread ribs manually.<br>4. Compress heart in hands or against chest wall at normal rate or as indicated by good ventricular filling. | Call Anesthesiologist.<br>Insert endotracheal tube when feasible.<br>Establish intravenous drip.<br>Time and chart medications and events.<br>Insert rib spreader as soon as convenient. | **DON'T** inject medications through chest wall.<br>**DON'T** prep skin.<br>**DON'T** wait for gloves.<br>**DON'T** count ribs.<br>**DON'T** wait for rib spreader. |

**The Acute Emergency Is Now Over Since:** 1. The lungs are being ventilated with oxygen and 2. The circulation to the brain is being provided manually

# CALL FOR CONSULTATION

**Caution — Defibrillating currents are dangerous to personnel!!**

**THIRD**

## RESTORE HEART BEAT

### A. Cardiac Standstill or Asystole (Majority of cases).

1. Continue compression. Adequate heartbeat usually returns within a minute or two as myocardial tone and color improve.
2. If beat fails to return, open pericardium parallel to phrenic nerve from diaphragm to base of heart.
3. If myocardium is atonic and flabby inject 3 cc. of 1 to 10,000 adrenalin into either ventricular chamber. (Repeat if necessary, 3 to 5 minutes later.)
4. Continue compression with either or both hands.
5. If myocardium is tense, contracted and unable to fill, inject prostigmine (neostigmine) 5 cc. 1:20,000 into either ventricle. Continue compression. (Repeat if necessary, 3 to 5 minutes later.)

**DON'T** use any drugs except for specific reasons.

**DON'T** use electric shock.

**DON'T** contuse myocardium.

**DON'T** displace heart excessively.

**DON'T** distort base of ventricles.

### B. Ventricular Fibrillation (Minority of cases initially).

**May follow standstill.**

1. Call for cardiac surgeon.
2. Compress heart until conditions are favorable for defibrillation:
   a. Myocardium pink for 1 minute.
   b. Myocardial tone good.
   c. Fibrillatory movements fine and rapid.
   If necessary inject 3 cc. 1 to 10,000 adrenalin into either ventricle and continue to compress.
3. Defibrillate when conditions are favorable.
   a. Select appropriate voltage (approximate).
      Small electrodes — plus or minus 100 volts
      Medium electrodes — plus or minus 150 volts
      Large electrodes — plus or minus 200 volts
   b. Select appropriate electrodes—small medium or large—depending on heart size.
   c. Apply electrodes firmly to contact all of ventricular surface.
   d. Shock three times at intervals of 1 second and duration of about .2 second.
   e. If defibrillation is successful, normal heart beat should return in 2 or 3 seconds. Then avoid all possible myocardial stimulation.
4. If unsuccessful, resume compression and repeat shock after favorable conditions have been re-established. (See 2 a, b, c.)
5. After cardiac resuscitation, support cardiovascular system with cautious use of intravenous fluids, blood, vasopressors, atropine, digitalis, etc., as **specifically indicated.**
6. Routine repair and closure with water seal drainage.

**DON'T** apply electric shock until conditions are favorable.

**DON'T inject:**

Potassium
Procaine
Pronestyl
Calcium chloride
Other drugs
(Unless clearly indicated after consultation)

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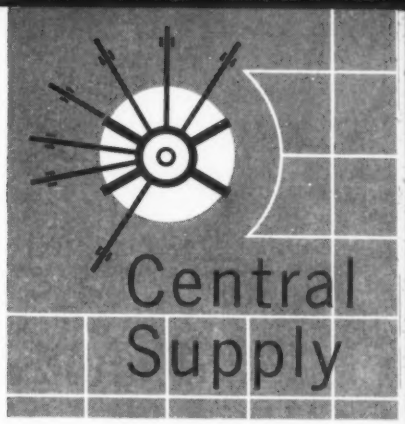
# Boston's Busiest...

## *Peter Bent Brigham's Central Supply Services Operating Rooms, Wards, Research Areas, Physicians' Offices*




The central supply room at the Peter Bent Brigham Hospital, in Boston, is generally rated as the busiest in the city. Out of it comes, every day, the enormous amount of supplies needed not only by the Peter Bent Brigham Hospital, but by other medical organizations as well.

"Everything within these walls that must be cleaned and sterilized," said Janet Armitage, R.N., who has charge of central supply, "goes through this room. We supply not only our own ward areas, operating rooms, research areas and physicians' offices, but also all the solutions for the surgical research laboratory at the Harvard Medical School, and we do some autoclaving for the Harvard School of Public Health.

"The number of items we stock runs into the hundreds, and we do use a large number of disposable items which have proven themselves in service. The greater part of our stock is solutions, and we are probably one of the very few hospitals that still manufacture their own.

"Before 1948, when this room was opened, central supply operated in another part of the hospital. Although it was adequate in supplying the needs of the doctors and patients, it was also wasteful and disorganized due to the pressures of a very heavy patient load. Central supply is, as most hospitals have come to realize, a business in itself, and the administration made it their business to see that it came to be operated as such at this hospital."

The room itself, noted for the efficiency of its work flow and in-

**Janet Armitage, left, head of central supply, is shown with a dressing cart designed by Dr. Carl W. Walter. The cart contains everything needed to perform any type of surgical dressing, and each is returned to central supply twice daily for a complete washing and restocking. The carts are currently stationed only in the surgical areas, since the greater part of the work is of that nature, but the hospital hopes to extend their use to other areas in the future.**

**There is one delivery of supplies throughout the hospital once a day, every day of the week. The central supply orderly at the right has just returned from the floor with his baskets loaded with soiled equipment and supplies. He will check their contents against the original requisition to note and record any missing articles.**

# Meinecke

helps you serve
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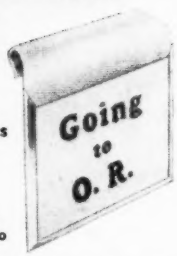
## LARGE COLORFUL EASY-TO-READ INSTRUCTION CARDS




**and Bed Card Holders signal doctors' instructions . . . changes in orders**

- **save time for hospital personnel**
- **protect patients**
- **serve as guide to visitors**

Fill in quantity of each wanted on this handy list and send with your order.

- ☐ Absolute Rest
- ☐ Absolute Bed Rest
- ☐ R.M.R.
- ☐ Chaplain Calling
- ☐ Clergyman Calling
- ☐ Clinitest Every Specimen
- ☐ Clinitest 7-11-4-9
- ☐ Complete Bed Rest
- ☐ Complete Bed Rest with B.R.P.
- ☐ Delay Tray
- ☐ Diabetic
- ☐ Do Not Disturb
- ☐ Do Not Disturb —B.M.R. in A.M.
- ☐ Do Not Disturb E.K.G.
- ☐ Do Not Enter
- ☐ E.K.G.
- ☐ Feed With Care
- ☐ Fluids Restricted
- ☐ Force Fluids
- ☐ Going to O.R.
- ☐ Going to Physical Therapy
- ☐ Going to X-Ray
- ☐ Hold Breakfast
- ☐ Holy Communion
- ☐ Ice Chips Only
- ☐ Intake and Output
- ☐ Isolation
- ☐ Isolation—Gown Only
- ☐ Keep Fiat
- ☐ Liquids Only
- ☐ Measure Intake and Output
- ☐ Measure Urine
- ☐ Night Nurse Sleeping
- ☐ No Ice Water
- ☐ Nothing by Mouth
- ☐ Nothing by Mouth After "2400"
- ☐ Nothing by Mouth After Midnight 1st Day G.I. Series
- ☐ No Smoking
- ☐ No Visitors
- ☐ No Visitors for a Few Minutes—Patient Taking Treatment
- ☐ Omit Breakfast
- ☐ Omit Breakfast and Hold Dinner
- ☐ One Visitor at a Time
- ☐ Out of Order
- ☐ Oxygen Being Given
- ☐ Patient Sleeping
- ☐ Precaution
- ☐ Quiet Please
- ☐ Radium
- ☐ Remove Packing
- ☐ Save Specimen
- ☐ Save Stool
- ☐ Save Urine
- ☐ Sips of Water Only—Blood Sugar in A.M.
- ☐ Special Diet
- ☐ Special Tests
- ☐ Sterile
- ☐ Strict Isolation—Gown & Mask
- ☐ Test Urine
- ☐ Transfusion
- ☐ Turn._____Hour
- ☐ 24 Hr. Urine Specimen
- ☐ Unsterile
- ☐ Urine Specimen
- ☐ Visitors Limited
- ☐ Water Only

Size: 4" x 6" — Price $2.16 per doz. assorted

| Card Holders (Lots of) | Prices per Dozen 1 Doz. | 3 Doz. | 6 Doz. |
|---|---|---|---|
| ☐ Aluminum for ROUND Bed Rails | $8.50 | $7.85 | $7.40 |
| ☐ Aluminum for SQUARE Bed Rails | 8.50 | 7.85 | 7.40 |
| ☐ Stainless Steel for ROUND Bed Rails | 10.35 | 9.60 | 8.85 |
| ☐ Stainless Steel for SQUARE Bed Rails | 11.35 | 10.50 | 9.65 |

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Chicago, Dallas and Columbia, S. C.
and Sunnyvale, Calif.,


**PETER BENT BRIGHAM HOSPITAL**

**CENTRAL SUPPLY ROOM CREDIT MEMO**

RETURNED BY
COST CENTER:
NAME _____
CODE _____ PREPARED BY _____ DATE _____

| NO. RETURNED | NAME OF ITEM RET'D. | PRICE PER UNIT | CREDIT VALUE | LIST OF MISSING REUSABLE EQUIPMENT | COST OF MISSING ITEM | NET CREDIT |
|---|---|---|---|---|---|---|
| | 75cc flask | | | | | |
| | 100cc flask | | | | | |
| | 500cc flask | | | | | |
| | 1000cc flask | | | | | |
| | 2000cc flask | | | | | |
| | steri-mix bushing | | | | | |
| | steri-pour bushing | | | | | |
| | stoppers 75cc flask | | | | | |
| | procaine bottles | | | | | |
| | procaine caps | | | | | |
| | 2cc syringes | | | | | |
| | 5cc syringes | | | | | |
| | 20cc syringes | | | | | |
| | large basins | | | | | |
| | small basins | | | | | |
| | emesis basins | | | | | |
| | sterilization trays | | | | | |
| | gloves | | | | | |
| | needles | | | | | |
| | wound treatment kit | | | | | |
| | cath. | | | | | |
| | catherization | | | | | |
| | venous cannulization | | | | | |
| | | | | | | |
| | | | | | | |
| | TOTAL | | | TOTAL | | |

**Figure 1. The credit memo reproduced above is used by the central supply orderly to check off used equipment returned by the various areas, and to enter missing reusable material, together with their itemized costs. Missing items are charged against area responsible, and cost is transferred to CSR budget.**

**CENTRAL SUPPLY continued**

and-out movement of supplies, was designed by Dr. Carl W. Walter. The system of records and charges was the result of meticulous, searching study by a cost analyst and the hospital's accounting department.

"The consultant spent a full year here, part-time of course," continued Miss Armitage, "going into every single item used in central supply. He made it his concern to find out how much it cost, how long it lasted, and what happened to it all along the line. He went into the various departments to learn how much the material itself cost and the labor cost.

"It was a most revealing study, and the system devised as a result of it is the basis of our present ability to operate efficiently and economically.

"In the old days, before adequate records were kept, central supply was sometimes hard put to replenish supplies.

"To select an item at random: this department might have shown, in a given month, a requisition order for scissors out of proportion to its normal demand. Since no one knew why so many new scissors were needed, it was difficult to justify our demands on the administrative budget. Now, by our checking method, we can spot at once where the loss occurred, and the ward or area responsible is charged for it, the cost being transferred out of the central supply budget. This method enables us to get our replacements promptly and without question. And you may be sure," she added, "that it has cut down on loss and breakage to a very marked degree."

To assist her in the operation of central supply, Miss Armitage (who is a dyed-in-the-wool Peter Bent Brigham alumna, having gotten her cap from the hospital's school of nursing, done general duty, served as head nurse on the pavilions for seven years and at the blood bank for three years before taking over her present duties in 1950) has a staff of 20 employees. Thirteen work the 7 a.m. to 3 p.m. shift; five work the 3:30 to midnight shift; and two are on nights from 11 p.m. to 7 a.m.

There is one delivery of supplies throughout the hospital every day of the week. It is the responsibility of the head nurse to make out her requisitions, which are picked up by the central supply orderly. Every requisition must bear the code number of the department or area requesting the supplies.

Seventy-five per cent of the supplies are requested by the operating rooms. Wards come next in point of demand, and the research areas last. The orders for each area are placed in baskets and delivered.

When the soiled supplies and equipment are picked up and returned to central supply by the night shift, the orderly checks the contents of the baskets against the original requisition sheet, and fills out a credit memo (Figure 1). Any articles missing, unless they are in the category of supplies paid for by the patient, are charged against the ward.

"If catheterization sets are missing, for instance," said Miss Armitage, "the ward is charged by a cost transfer."

To keep track not only of supplies used by each department, but to handle charges to patients versus those to wards and other areas, Miss Armitage keeps a monthly summary sheet (Figure 2). An asterisk (*) indicates items for which patients are billed direct; those not so marked are the responsibility of the ward, and the latter is so charged, as in the case of the catheterization sets mentioned.

A monthly summary (Figure 3) is also kept of credits and debits for each ward, to enable Miss Armitage to fill out her own monthly requisition for new supplies.

To further facilitate services and charges to physicians and patients, central supply uses three additional forms.

The first form is the private ambulatory requisition and charge (Figure 4), which is made out by the physician. If he wants the

(*Continued on next page*)

**Chief therapist Edith Neimant, right, is shown with one of the emergency resuscitation carts, eight of which are stationed in various areas of the hospital for almost immediate availability. All materials needed for such emergencies are packed in the cart by central supply, and covered tightly with polyethylene. If the polyethylene is not broken within a month, the cart is returned to central supply, where it is inspected by Mrs. Neimant, and needed replacements made before it is returned to service.**

**James Murray, M.D., assistant to Dr. Walter, is shown on the left with the oversize mattress autoclave — one of the first of its kind installed in the country, and still one of the largest in use in the New England area. The gas sterilizer handles all the equipment used in open-heart surgery, as well as equipment used for infectious and terminal cases. "Into it go pillows and mattresses," said Miss Armitage, "and we have even taken beds apart and put them in, too."**


# USE DIACKS EVERY DAY

*"When you use Diacks every day*
*All your worries clear away*
*With a Diack in the middle*
*Pack sterility is no riddle."*

**Go back to the first principles of cleanliness and sterility and you will control the staph problem.**

●

**Smith & Underwood**

*(Sole Manufacturers of Diack Controls and Inform Controls)*

**Royal Oak, Michigan**

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materials he requests to be autoclaved after use, he makes a notation to that effect, and the service is handled by central supply.

The first form is in triplicate: Miss Armitage keeps the original; the second (yellow one) is clipped to a charge sheet bearing the physician's name. The third copy is the physician's record. Miss Armitage prices the items each morning, and sends the listings to the accounting office.

The second form is the charge requisition (Figure 5). After this requisition is filled, it, too, is clipped to the yellow sheets already accumulating to the doctor's account.

The third form is the credit slip (Figure 6) for unused items, which are then credited to the doctor or the patient. Doctors are billed once a month.

To one side of the central supply room is an oversize mattress autoclave.

"This is a gas sterilizer," Miss Armitage said. "We have used steam, but find the gas method of sterilization more satisfactory. Into this autoclave goes equipment used by infectious or terminal cases, as well as all the equipment used in our open-heart surgery.

"Open-heart surgery is performed about twice a week, so the autoclave is routinely in service for this work. We have an affection for this old autoclave. It's one of the first of its kind installed in the country, and I believe it is still one of the largest in use in this part of the country. Into it go pillows and mattresses; we have even taken beds apart, and put them in, too.

"The piece of equipment that we are probably most proud of," continued Miss Armitage, "is the dressing cart designed by Dr. Walter and the surgical and nursing staff. At present, these are stationed only on the surgical services, since the greater part of the work at the hospital is of that nature. They are expensive, so we put them where they are most urgently needed, but we hope to

MONTHLY SUMMARY REQUISITIONS — Sheet No. 1

Cost Center Code _____ FILLED BY CENTRAL SUPPLY ROOM

Cost Center Name _____ PETER BENT BRIGHAM HOSPITAL Month of _____

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | Totals | Unit Cost | Extension |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SETS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bronchogram No. I | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bronchogram No. II | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cannulization Venous | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chest Drainage | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chest Drainage Flask | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Catherization, Female | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cyst | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Constant Drip | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Constant Drainage Stopper | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| I. V. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lumbar Puncture | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Myelogram | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nebulizer | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Paracentesis | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pneumolifter | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Suture Removal | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Thorocentesis | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Thorocentesis Flask | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Thorocentesis Diagnostic | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ureteral Drainage | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Venous Intubation #14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polyvinal Tubing #14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Venous Intubation #18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Polyvinal Tubing #18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Venous Pressure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ventricular Drainage | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 ft. Wangensteen | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 ft. Wangensteen | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Wound Treatment Kit | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Constant Drainage Sets | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Liver Biopsy | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEEDLES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. 18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. 19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. 21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. 22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. 23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. 23 Hypo | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Intracardial | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lumbar Puncture | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ventricular Tap | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. 25 ⅝" Disposable | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OXYGEN THER. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Boothby Mask | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Nasal Oxygen Catheter | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Oxygen Gauge | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Oxygen Tent | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Positive Pressure Mask | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tent Canopy | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Disposable Oxygen Mask | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**Figure 2, above, a monthly summary requisition sheet, indicates by an asterisk (*) items for which patients are charged. All others are the responsibility of the ward.**

**Figure 3, below, is the monthly summary form used to credit wards and areas with equipment returned in good condition, and to charge them for missing articles.**

CENTRAL SUPPLY ROOM CREDIT MEMORANDUMS - MONTHLY SUMMARY

RETURNED BY _____ PREPARED BY _____ Month of _____

COST CENTER: NAME _____ CODE _____

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | Totals | Unit Cost | Extension |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 75cc flask | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 100cc flask | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 500cc flask | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1000cc flask | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2000cc flask | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| steri-mix bushing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| steri-pour bushing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| stoppers 75cc flask | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| procaine bottles | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| procaine caps | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5cc syringes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5cc syringes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20cc syringes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| large basins | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| small basins | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| emesis basins | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| sterilization trays | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| gloves | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| needles | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| wound treatment kit | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cath. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| catherization | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| venous cannulization | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

CENTRAL SUPPLY ROOM - MISSING REUSABLE EQUIPMENT - MONTHLY SUMMARY

PREPARED BY _____ Month of _____

| LIST OF MISSING REUSABLE EQUIPMENT | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | Totals | Unit Cost | Extension |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

*Peter Bent Brigham Hospital*
721 HUNTINGTON AVENUE
BOSTON, MASSACHUSETTS

PRIVATE AMBULATORY PATIENT
REQUISITION AND CHARGE

No. 37126

Charge to _____

Address _____ Date: _____

Patient _____ Doctor _____

Service Requested: **Results**

FORM 333-10M 9-60

This Copy To Be Returned to Physician by Service Department

**The three forms reproduced on this page are used to facilitate charges and services to physicians and patients. Figure 4, above, is made out by the physician in triplicate. Should he want the equipment requested autoclaved after use, he makes a note to that effect, and central supply handles the service. The original of the form is retained by Miss Armitage who prices the requisitioned equipment and services each morning, and sends the form to the accounting office. The second sheet is clipped to the physician's charge sheet. The third copy is retained by the physician for his own records. The accumulated slips clipped to the physician's charge sheet are totalled for billing once a month.**

NO SERVICE PERFORMED WITHOUT PROPERLY FILLED OUT CHARGE REQUISITION

USE ADDRESSOGRAPH PLATE OR PRINT

PATIENT'S NAME

NUMBER

AREA & FLOOR

DATE

**Charge Requisition**

CHECK (√) SERVICE AREA NAME AND CODE NUMBER

| | | | |
|---|---|---|---|
| ☐ PHARMACY | 207 | ☐ PHYSICAL THERAPY | 238 |
| ☐ X-RAY | 260 | ☐ TELEPHONE | 270 |
| ☐ EKG | 235 | OTHER AREA | CODE |

| IN PATIENT (√ ONE) | OUT PATIENT (√ ONE) |
|---|---|
| ☐ PRIVATE | ☐ CLINIC |
| ☐ SEMI-PRIVATE | ☐ EMERGENCY WARD |
| ☐ WARD PRIVATE | ☐ PRIVATE AMBULATORY |
| ☐ WARD | |

| REQUEST FOR: (PRINT) | CODE | UNITS | CHARGE |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | TOTAL UNITS | TOTAL CHARGE |

PETER BENT BRIGHAM HOSPITAL

**Figure 5, above, is the charge requisition. After the equipment or services requested have been handled, this slip is clipped to physician's charge sheet.**

**Figure 6, below, is the form used to list unused items or services, which are credited to the patient or doctor concerned, and deducted from the total bill.**

PRINT SERVICE AREA NAME AND CODE NUMBER

F-294

**PETER BENT BRIGHAM HOSPITAL**

PRINT PATIENT'S FULL NAME & ADMITTING NO.

STREET

CITY STATE

DATE

| IN PATIENT (√ ONE) | OUT PATIENT (√ ONE) |
|---|---|
| ☐ PRIVATE | ☐ CLINIC |
| ☐ SEMI-PRIVATE | ☐ EMERGENCY WARD |
| ☐ WARD PRIVATE | ☐ PRIVATE AMBULATORY |
| ☐ WARD | |

**No Credit Allowed Without Writing Procedure And Code Number**

| CREDIT PATIENT FOR FOLLOWING PROCEDURES | CODES | UNIT | CREDIT |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| CREDIT REQUESTED BY: (PRINT NAME) | | TOTAL UNIT | TOTAL CREDIT |

**CREDIT**

have them in other areas in the future."

The cart contains everything needed to perform any type of surgical dressing, from removing sutures to doing a profuse drainage dressing. Each cart is brought down to central supply twice daily. All equipment is removed, the cart is washed down, restocked, and sent back into service.

Also operating out of central supply is the oxygen therapy department, headed by Edith Neimant. As chief therapist, Mrs. Neimant is called upon to set up oxygen tents, put patients on respiratory assistors, and answer doctors' questions. The service is formally covered 40 hours a week, Monday through Saturday noon, but Mrs. Neimant is on call each weekend.

In connection with its service, and set up by central supply, are the resuscitation emergency carts. There are eight of these carts stationed in different areas, so that precious time is not lost in obtaining the life-saving equipment.

All material needed to handle such emergencies is packed in the cart, which is tightly covered with cellophane. The date of its assembly is noted, and if the cellophane has not been broken within a month, the cart is returned to central supply, where Mrs. Neimant opens it for a thorough inspection.

She checks the medications for any change in color which might indicate loss of potency, and changes all the batteries in the laryngoscopes, before authorizing the return of the cart into service.

"We are, of course," concluded Miss Armitage, "prejudiced in favor of the central supply system used here at Peter Bent Brigham Hospital, because we know it works to the benefit of the patient and the staff. The responsibilities of administration, including the accounting office, the medical, nursing and research personnel, and central supply, dovetail neatly to make a closely knit over-all operation. It is the type of operation, with perhaps some slight modifications, that could work effectively, we believe, in any size hospital."

CYANAMID

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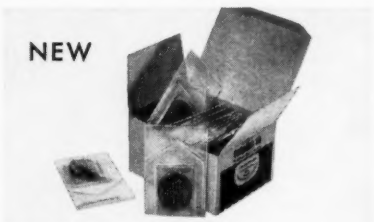
*Through the World's Largest Surgical Film Library*

# SURGICAL PRODUCTS NEWS

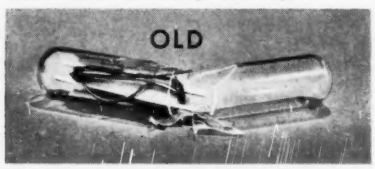
# SAFER SUTURE DISPENSING TECHNIC NOW WIDELY USED IN THE O. R.

***Standardization on Davis & Geck Individual Plastic Strip Packs Combines Greater Safety With Simplification of Handling, Shipping and Storage Problems***

Old style bulk storage in jars and solutions poses constant threat of cross contamination with "staph." or other organisms, particularly the hepatitis virus whose susceptibility to any cold germicidal solution is unknown. One contaminated suture tube returned to a common storage container may contaminate all the rest. In addition, jars are heavy, hard to open, difficult to store, prone to costly breakage.

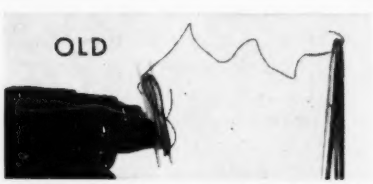



New Davis & Geck Surgilope SP® sterile suture strip packs protect each suture individually in sealed plastic double envelopes, completely eliminating the cross-infection hazard of common storage in jars and solutions. Compact, lightweight 3-dozen cartons replace clumsy, fragile jars . . . handling is faster and easier, breakage is eliminated and shipping costs are sharply reduced.




Slippery, hard-to-break suture tubes are awkward to handle and a time-consuming nuisance to open. Razor-sharp edges of broken tubes frequently nick sutures and adhering glass splinters may actually invade the operating field. Unused tubes must be washed, sorted and returned to jars.

With Surgilope SP packaging, the circulating nurse simply strips open the outer envelope to dispense the sterile, sealed inner envelope containing the suture. Three simple, speedy dispensing technics fit any operating room situation. Extra sutures are quickly opened as needed, reducing waste and time-consuming resterilization.




Delivery of sutures, *particularly surgical gut,* on tightly wound reels tends to kink and weaken sutures . . . excessive handling is required for unreeling and straightening.

New Davis & Geck loose-coil winding delivers a supple, kink-free suture, ready for instant use.

INVITES COMPARISON

## NEW, SHARPER DISPOSABLE NEEDLE PROVIDES ADDED SAFETY IN ALL-PLASTIC, WET-PROOF PACK

The point of the Vim® Sterile Disposable Needle is the result of extensive research in point design. Penetration tests prove that its 12° top bevel and longer side pointing provide easier tissue entry than the usual more rounded point design. Equally important, this extra sharpness has been achieved without beveling into the lumen, ensuring a stronger point. Unlike weaker lancet-type points, the Vim point will not "fish hook" in penetrating the vial stopper before ever reaching the patient.

The transparent Vim all-plastic wet-proof pack is a truly closed aseptic system, assuring maximum protection against cross-infection. There is no spot-sealed cap to "breathe in" airborne contaminants when subjected to changing temperatures . . . no paper backing easily penetrated by moisture.

The unique Vim plastic hub is square for easier handling, and fused – not glued – to the stainless steel cannula. The needles are ultrasonically cleaned (leave no tattoo marks), and fit any standard Luer syringe.

The Vim Disposable Needle is approved for purchase under the rigid new United States Armed Forces and Veterans Administration specifications for sharpness and package safety. Test it yourself against any other disposable in the field, before placing your next order.

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THE LAB

# How To Set Up A Parasitology Department*

Parasites have been known since the days of antiquity, and the Egyptians recognized three types as long ago as fifteen centuries before Christ. During the middle ages, the study of parasites was shunned, but with the discovery of the microscope in 1600, and Leuwenhoek's description of bacteria in 1683, new research avenues were opened, and fresh interest awakened.

Until the past few years, parasitology, if practiced at all in our U.S. hospitals, was usually a now-and-then department in a corner of the pathology laboratory. With the tremendous upsurge in travel, and the speed of our jet-age transportation bringing the people of the world closer together physically, if not always mentally nor ideologically, parasitology has taken on new stature in the diagnostic field.

It has probably been given its greatest impetus in this country by the influx of Puerto Ricans and peoples of other tropical countries, who are especially subject to parasitic invasion because of substandard sanitary conditions. The employment of vast numbers of these newcomers in hospital dietary departments has literally created parasitology laboratories where none were before, and, especially in our large metropolitan centers, new laboratories are being installed for parasitological examination and identification exclusively. In some hospitals, parasitological examination of dietary employees is routine, usually on a monthly basis.

One of the pioneer parasitology laboratories in this country is located in the New England Center Hospital in Boston, Mass.

According to William J. Hendry, Jr., supervisor of the clinical pathology and parasitology laboratory, who has been with the hospital since it opened in 1946, "the laboratory here just sort of evolved. We had a technician who became interested in parasitology, and had the background to do it, so we put him to work. Subsequently, we had a male technician who came in three times a week.

"This arrangement was unsatisfactory for several reasons. Many examinations are valueless unless done almost immediately the fecal specimen is obtained. More important, a number of our doctors, especially Dr. Siegfried Tannhauser, an internist; Bermuda-born Dr. Edwin Ashwood; and Dr. William Damhsek, internationally-known hematologist, had developed a keen interest in the subject. As the reputation of these men grew here and abroad, it was inevitable that the hospital should establish itself as a parasitology diagnostic center.

"Dr. Damhsek heads our unrestricted residency program, which attracts young internes from all over the world. Trained at the New England Center Hospital, these physicians return to their own countries, from which they refer peculiar diagnostic cases to the center.

"Trained technologists in this field are not numerous, and the assignment of Carol Hamer as full-time parasitologist not only permitted us to keep pace with the snowballing demand for the service, but extended the concentric waves of interest still further throughout the hospital."

Miss Hamer, who operates on a tight schedule studded with demands for immediate and urgent laboratory action, anticipates an even heavier work load.

"I can always make time for more tests," she said, "and in addition to a continuing increase in parasitological examinations, doctors are requesting more and more fat studies on fecal specimens on patients with faulty absorption problems. Last year, we did 274 such studies, and the figure will be considerably higher this year.

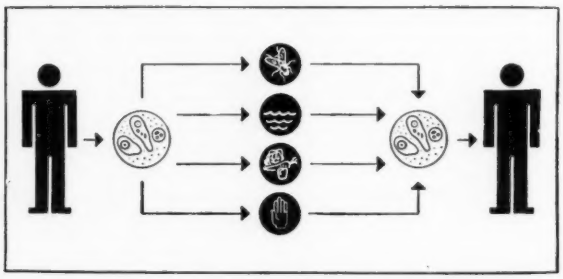
"Parasitology is a phase of laboratory work," she continued, "which will grow as people become more mobile over a greater part of the globe. Most laboratory courses don't include parasitology because there aren't enough interested students to warrant it. Students don't mind handling blood specimens, but most of them balk at having to work with fecal specimens.

"I became interested in the subject, and made application through the sponsorship of the New England Council of Hospitals to the state for approval to enroll in the four-week course which is given free of charge at the Communicable Disease Center in Atlanta,

*(Continued on next page)*

*The editors are indebted to Nicholas Menolasino, Ph.D., Augustana Hospital, Chicago, for help in preparing this article.

**Carol Hamer conducts tests in parasitology lab.**



**Transmission of E. histolytica: man infected with amoeba; cysts in feces; mode of transportation; cysts in food; new host infected.**

**LAB continued**

Ga. It's a very intensive course that demands a good deal of application and concentration on the part of the students. One of the many things we learned in Atlanta is that if you aren't on your toes, you are no longer in Atlanta! But the insistence and persistence and, above all, accuracy, based on secure knowledge, is invaluable.

"It is very easy, for instance, for an amateur, or even a slip-shod 'expert' to confuse *Entamoeba coli,* which is harmless, with *Entamoeba histolytica,* which is pathogenic. Extensive and rapid invasion of the colonic wall by the amoebas may lead to severe or fatal hemorrhage or perforation. Amoebic abscess of the liver is the most frequent complication, though amoebic hepatitis is not uncommon.

"The seriousness of what we deal with," continued Miss Hamer, "does not mean, however, that the technologist must have the latest, most expensive equipment to do exact parasitological examinations. A small hospital laboratory needs, more than anything else, a conscientious technologist who has a passion for detective work of this sort, and an excellent resource of reference books, a microscope, and a microscope lamp.

"Here at the Center, we use inexpensive, convenient ice cream containers for fecal specimens. We do have an electric warm stage which can be set on the stage of the microscope to keep those fecal specimens which must be examined as quickly as possible at body temperature; but the small laboratory can get the same result by placing a heated penny on the slide. The heated penny will give the slide enough warmth to keep any of the mobile forms of parasites alive long enough for identification.

"If there is an incubator at 37°C handy, specimens may be kept warm up to half-an-hour. If a longer time is required before the examination, the specimens should be placed in a refrigerator.

"The Department of Health, Education, and Welfare, Public Health Service, Communicable Disease Center, Chamblee, Ga., offers an excellent four-week course in *Laboratory Methods in the Diagnosis of Parasitic Diseases.* On the completion of this course, a continuing evaluation program is maintained between the students and the school by mail.

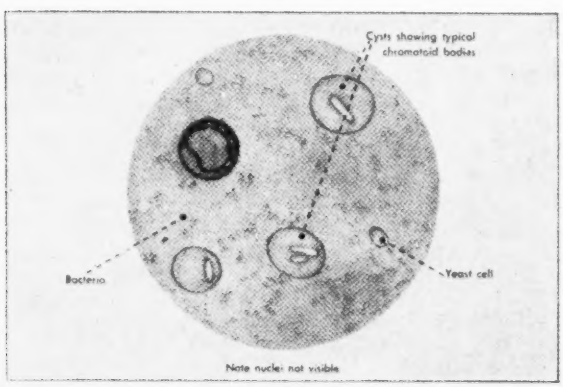
"In addition to the course and the evaluation program, the center aids us in identifying and confirming parasites that we send to them, either because we are in doubt as to its positive identification, or because it is unfamiliar to us."

About 60 per cent of the patients who come to the New England Center Hospital for diagnosis are from outside the Boston area; many from outside the country itself. The parasitology laboratory is now getting the hospital doctors to routinize examinations for patients who have been traveling abroad, where they are sometimes in danger of picking up a parasitic infection due to eating native foods purchased from street peddlers and similar sources, where some of the foods are concocted from unwashed vegetables that have been fertilized with human excreta.

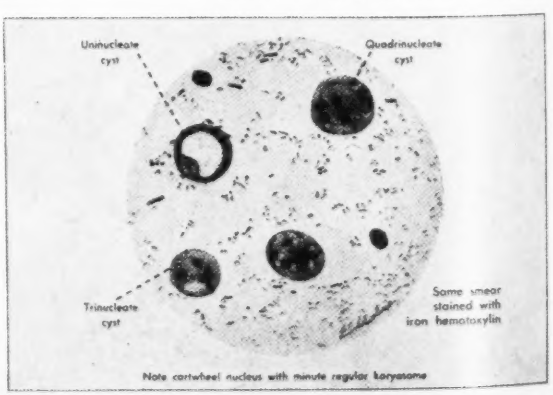
Though most of the examinations are on fecal material, tests for parasites are also run on urine, blood, and gastric aspirations.

Boston, like other large cities, is experiencing a sharp increase in its Puerto Rican population. Natives of this American island do not reveal much infection by the protozoan-type parasite, but tend to a high percentage of worm infection – often without serious symptoms. Unfortunately, many who have had an active infection in the past become carriers and literally spread the infection as they walk about. Transmission is usually through such carriers who are engaged in the handling of food stuffs.

The first step in laboratory ex-




1. **Fresh physiologic salt preparation.**




2. **Same smear stained with iron-hematoxylin.**

amination for *E. histolytica,* which takes up residence in the cecum, sigmoid, and rectum, and which is the only pathogenic amoeba, is to observe the characteristic of the stool. If it is a formed stool, examination will not reveal trophozoite, though cysts may be seen. If the stool is liquid or soft – and symptoms are present, of course – the *trophozoites,* which is the active, living form of this amoeba, will be found.

It is at this point that the careless, or insufficiently trained, technologist, will almost certainly get into trouble. Unless there is knowledgeable differentiation, morphologically, between *E. histolytica* and *E. coli,* a completely wrong diagnosis will be made. The former, as previously mentioned, is pathogenic and potentially highly dangerous: the latter is normal and harmless. In *E. histolytica,* the microscope will reveal ingested red blood cells; these are never observed in *E. coli,* though bacteria may be seen.

Trophozoite, the motile vegetative form of *E. histolytica,* is invasive. After a period of activity and multiplication, certain of them round up into precystic forms, secrete a resistant capsule (cyst wall), and are discharged in the feces of the host as the infective form. These cysts have not been found within the tissues of the human host.

The actively motile trophozoites are short-lived outside the body, and can rarely survive exposure to the hydrochloric acid and digestive enzymes of the stomach and upper intestinal tract. The encysted forms, however, can withstand marked changes in their environment, particularly cold, and are responsible for transmission. These characteristics point up why the liquid or soft stool must be examined as soon as possible at body temperature, and why the formed stools may be left until time permits, and may even be done in groups.

The cyst-passer is a common clinical type. Two classes are recognized: convalescents who, following acute dysentery or amoebic diarrhea, have a chronic infection, and more or less continuously show encysted forms in their stools, and those who have acquired the infection, but have not experienced clinically apparent active disease.

Five progressive steps are used in the parasitology laboratory in the detection of *E. histolytica,* the last being the ultimate in continuing, searching scrutiny. Not all of them are necessary, of course, for all specimens, and the skilled technologist, not subject to confusion between *E. histolytica* and *E. coli,* may well make accurate diagnosis with step one alone.

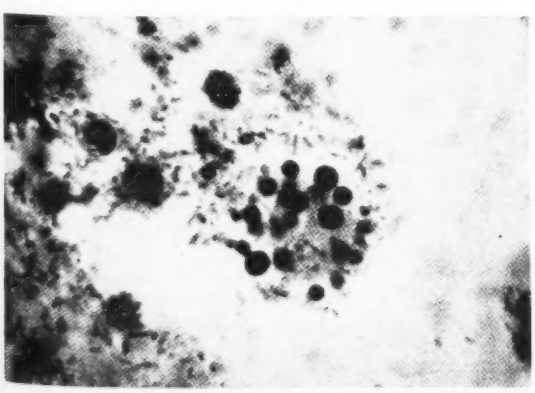
1. **Direct microscopic examination** for trophozoites and cysts. Where selection is possible, the portion of the stool which is passed last, with or without purgation, is used as soon as possible. (Warmth, continually stressed, is of such importance that the dedicated technologist will insist that a warm bedpan be used to receive the specimen.) Mucoid samples are preferred. A small sample is emulsified in a large drop of saline solution on a microscopic slide, and examination made with the slide heated to 37°C.

2. **D'Antoni's Iodine Stain** for cysts. A small sample is emulsified in a drop of saline solution; a drop of D'Antoni's iodine solution (10% potassium iodide solution) is added; the material is thoroughly mixed, and a cover-glass applied. Cysts appear as yellowish refractile globules; morphological characteristics such as numbers of nucleo and nuclear karyosome are brought out; glycogen vacuoles are hyaline refractile structures; chromatoidal bodies are deeply stained with iodine, sometimes lightly stained. Both unstained and iodine stained preparations may be mounted on a single slide.

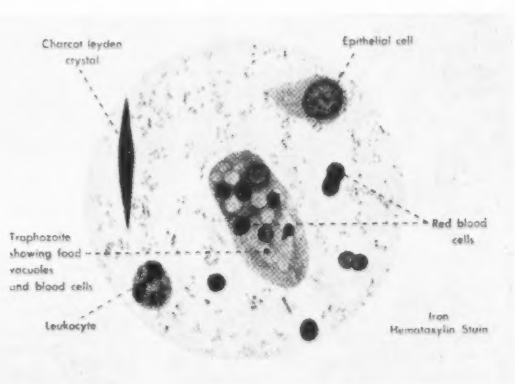
3. **Zinc Sulfate Flotation Method** for concentration of cysts. This is a simple, highly efficient procedure for demonstrating the presence of cysts in *E. histolytica* in samples poor in cysts. Since cysts tend to appear in "showers" or cycles, and are often irregularly distributed in stools, the procedure should be part of the routine examination of formed stool specimens provided *E. histolytica* has not been demonstrated in the preceding examination. A portion of the formed stool, about the size of a pea, is thoroughly emulsified in about 10 parts of saline solution or water, and centrifuged for one minute at 2500 rpm.

The supernatant fluid is poured off, about 4 cc. (or to within one

*(Continued on next page)*



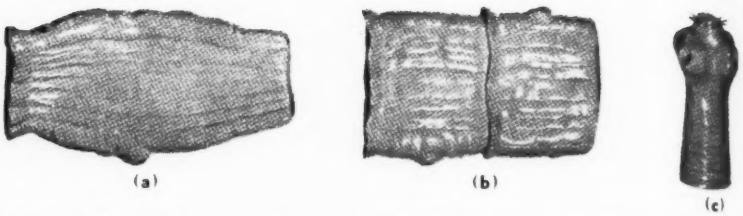
**3. E. histolytica. Smear from stool showing trophozoite with ingested red blood cell (iron hema stain).**




**4. Microscopic appearance of typical amoebic dysentery stool.**

half inch of the top of the tube) of a 33% zinc sulfate solution added, and the tube centrifuged for one minute at 2500 rpm. Slowly fill the tube to the brim with the zinc; let set for a couple of minutes. A large platinum loop is used to transfer the film of material from the surface of the specimen to the microscopic slide. A drop of D'Antoni's iodine or Lugol's solution diluted to 1% is added, the material is mixed and cover-glass applied. The procedure is also useful for demonstrating the eggs of helminths. Another good method for the concentration of the ova is the formalin-ether sedimentation procedure.

4. **Iron-Hematoxylin Slides** for permanent preparations. This stain brings out the nuclear structure. The well-defined morphological characteristics to be noted are: size of cyst, granularity of cytoplasm, number of nuclei, distribution of chromatin on the nuclear membrane, central or eccentric position of the karyosome in the nucleus, and the shape of any intensely stained chromatoidal bodies in the cytoplasm.




**Taenia solium adult worm. Cause of intestinal "pork tapeworm" infection. (a) Gravid proglottio from end of chain; (b) mature proglottios from middle of chain; (c) scolex.**

5. **Culture Method.** Cultivation of *E. histolytica,* in either active or cyst stage, on artificial media, can be done on solidified egg slopes covered with horse serum and Ringer's solution.

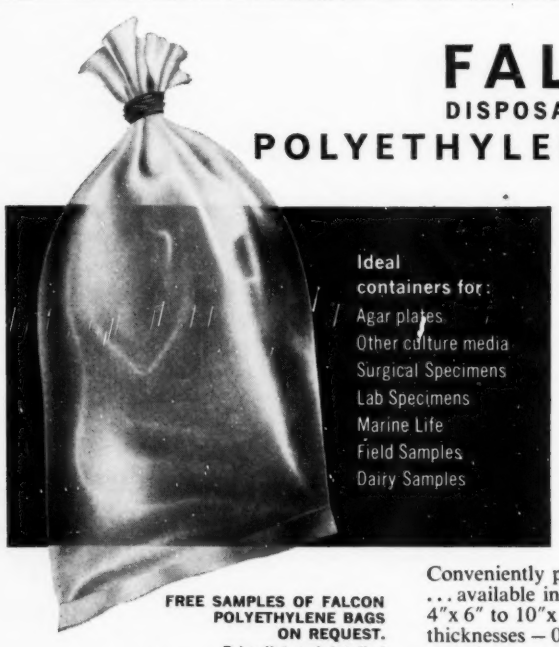
If a tapeworm is suspected, the entire fecal specimen is examined macroscopically for portions of the worm, which resemble pieces of spaghetti. Once these portions show, of course, the diagnosis is confirmed, but it is only the beginning of what usually turns into a long and tedious hunt. Testing is put on a continuing basis, with specimens sifted through a wire screen, until the head of the worm is passed and identified.

"There are some forms of parasites that we rarely see in this area, such as the *Ascaris lumbricoides,* man's largest intestinal roundworm, and the *ancylostomatidae,* or hookworm, which remain persistent in the mountains and hilly areas of the South. Soil pollution near dwellings is responsible for most of the former; the latter is generally picked up directly from the soil itself by persons going barefoot.

"The only epidemic of amoebiasis to occur in the U.S., as far as I know, was during the 1933 Chicago's World Fair. Publicized as 'amoebic dysentery,' the epidemic involved some 1,400 cases, and visitors to the fair who had contracted amoebiasis spread the condition later in their own communities.

"Though I am hardly suggesting the possibility of another epidemic," concluded Mr. Hendry, "our world has definitely grown smaller in just the relatively few years since 1933, and we are probably more exposed than at any time in the past to parasitic infection.

"Even the smallest community hospital can be on the alert for this type of invasion, with a small expenditure of time and money. Newcomers to our shores want to make a contribution to their new homes, and it is part of our responsibility as guardians of public health to be in a position to relieve them of parasitic guests should they unwittingly have them aboard. And the more we can make potential travelers aware that there are limitations to a carefree approach to vacationing, the better our chances to help them avoid harmful after-effects destructive to good will and understanding."

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FALCON PLASTICS

## Cesium Unit Installed At New York Hospital

A cesium-137 unit, used in radiation treatment of cancer, has been installed at Montefiore Hospital, New York City.

According to Charles Botstein, M.D., head of hospital's radiotherapy department for which the unit was designed, the machine produces 660,000 electron volts of energy. Although presently being used for short-distance treatment, it can serve as a supplement to the cobalt unit and supervoltage x-ray machines in treatment of deep-seated tumors.

The cesium-137 unit offers essentially the same advantages as the cobalt unit over a supervoltage x-ray generator of comparable energy. Both are above the critical level for preferential bone absorption; both spare the skin; and both require less space and maintenance. The cesium-137 unit, however, is especially advantageous spacewise, being small enough to fit into a filing cabinet drawer.

Dr. Botstein, who considers cesium useful for radiotherapy of tumors of the oral cavity, neck, and lymphnode metastases, warns that at least six months or more of clinical experience are needed before any conclusions can be reached about the machine's therapeutic effectiveness.

## 'Blackouts' Compensate For Sleep Loss

Brief lapses of attention, or "flash blackouts," apparently help the human body to catch up on sleep it missed the night before, according to L. Jolyon West, M.D., University of Oklahoma, and Dr. Harold L. Williams, Walter Reed Army Institute of Research, Washington, D. C.

The phenomenon, termed "micro-sleep," is not discernible to the eye, but can be detected by brain-wave tests. Lapses may be less than one second in length. The eyes remain open and movement continues, but there is a period of unawareness of the surroundings.

Drs. West and Williams were among the many scientists who monitored and studied the movements of a New York disk jockey who remained awake for over eight days to publicize a charity drive.

The scientists reported that the disk jockey, even though awake, followed his regular daily pattern of sleepiness and wakefulness. His normal sleep hours were three to eleven o'clock in the morning. It was noted that he became extremely drowsy about three, and began to clear about eleven o'clock.

## 'On the Beam' Sterilization Now Possible

Electron beams can now be used for medical product sterilization and food preservation. The beams are used to bombard sealed packages of medical or food products as they pass by on conveyor belts.

Products are thus sterilized or preserved in their own sealed containers at the end of the manufacturing process – eliminating any possible contamination during manufacture.

However, according to Dr. Lee E. Gordon, the new method will never replace steam autoclave sterilization in hospitals. Nor would it be practical for most hospitals to have their own units because the expense involved in an installation would be too great.

## Surgery Center Features Projected Kymograph

St. Barnabas Hospital for Chronic Diseases, New York City, recently completed a new surgery center which is one of the most advanced in the nation, and unique in that it is totally dedicated to chronic disease surgery and research.

Largest of the four new operating rooms is devoted to neurosurgery. Prominent among the advanced equipment is a kymograph system utilizing a 6 ft. by 9 ft. screen mounted on the wall of the operating room. The screen, visible from any part of the room, permits two to four hours of continuous recording of blood pressure, pulse, respiratory rate, concentration of inspired and expired gases, and temperature. The kymograph screen records a minute-by-minute log of the operation.

## Rib Cartilage Used in Ear Construction

A method of constructing an outer ear for the one child in 20,000 born without it has been devised by Radford C. Tanzer, M.D., Mary Hitchcock Memorial Hospital, Hanover, N.H.

Dr. Tanzer reports that he begins construction with a cartilage framework from the patient's rib. This framework is embedded beneath the skin on the side of the head, and later brought away from the head, into a normal position. The gap between is bridged with grafted skin.

The deformity, states Dr. Tanzer, has a severe psychological effect on the growing child, who is subject to the curiosity and ridicule of his friends and classmates. The condition should be corrected during the child's pre-school years.

## Exaggerated Radiation Fear Spurs New Disease

When a patient misses an appointment for x-ray, or shows a pallor when radiation is mentioned, he may be a victim of a new psychogenic disorder called radiophobia, or nuclear neurosis. So state Robert G. Zach, M.D., Monroe, Wis., radiologist, and David S. Goodman.

After figures on the genetic hazards of radiation were released, radiophobia became a common malady.

Later writing and medical opinions, coupled with strenuous efforts in defense of x-ray, have alleviated the scare somewhat, but, according to Dr. Zach and Mr. Goodman, the fear has been driven into the subconscious.

A healthy awareness of the hazards of radiation is desirable. Farsighted individuals have seen the scare as a mixed blessing – possibly helping to curb excesses in the use of radiation, and helping to make even competent users more aware of the possibilities for reducing exposure to the patient and themselves.

Further results may be the adoption of legislation designed to eliminate quackery and such nonessential and potentially dangerous applications for radiation as shoe-store fluoroscopy.

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Outgoing Virginia Hospital Association president Winfrey C. Bloxom (l.), administrator, Johnston-Willis Hospital, Richmond, offers congratulations to new officers for 1960, who are (l. to r.) William R. Reid, administrator, Jefferson Hospital, Roanoke, president; David Babnew, Jr., administrator, Northampton-Accomack Memorial Hospital, Nassawadox, treasurer; Hunter A. Grumbles, administrator, Stonewall Jackson Hospital, Lexington.

# Personally Speaking

**Mrs. Anne M. Howell** – has been named acting director of nursing, University Hospital and Hillman Clinics, Birmingham, Ala. She succeeds **Mrs. Kathryn M. Crossland** who resigned to become associate dean of the College of Nursing of the Texas Woman's University. Mrs. Howell has been associate director of nursing at the hospital.

**Leon A. Korin**– has been named acting executive director, Hospital Council of Philadelphia. He was formerly research director of the Hospital Council.

**Harold C. Michaels** – has been appointed assistant to the director, University Hospital, Baltimore, Md. He was formerly assistant professor of hospital administration, Emory University.

**Harvey D. Mudge** – has retired as chief pharmacist, St. Clare's Hospital, Schenectady, N. Y.

**Roy Myers,** former assistant administrator of General Hospital, Greenville, Miss., has been appointed acting administrator. He replaces **Dabney Gilliland,** who has been named administrator, John Peter Smith Hospital, Fort Worth, Tex.

**Max A. Norton** – was elected chairman, Mary Hitchcock Memorial Hospital, Hanover, N. H. He will succeed **Fletcher Low,** who had previously resigned.

**Raymond L. Pelton** – has been named administrator, White Memorial Hospital, Los Angeles, Calif., to replace **Erwin J. Remboldt** who will accept a similar post at Glendale (Calif.) Sanitarium and Hospital. Mr. Pelton has been assistant administrator, Hinsdale (Ill.) Sanitarium and Hospital.

**Mrs. Garnett L. Radin** – has been named administrative assistant to the director, Department of Hospitals, Metropolitan Dade County, Miami, Fla. Mrs. Radin was formerly administrator, Shriners Hospital for Crippled Children, Lexington, Ky.

**J. E. Stone** – has retired as honorary secretary and treasurer, International Hospital Federation, London, England. He is succeeded by **Dr. J. C. J. Burkens,** medical director of the Oude en Nieuwe Gasthuis, Delft, Netherlands.

**Elton TeKolste** – has been appointed executive secretary, Indiana Hospital Association. Mr. TeKolste was formerly associated with American Hospital Association.

**Joseph V. Terenzio** – has been named director, Brooklyn (N. Y.) Hospital. He was formerly exec-

*(Continued on next page)*

New officers of the Florida Hospital Association talking things over are (l. to r.), Arthur L. Bailey, administrator, Orange Memorial Hospital, Orlando, president; Joseph F. McAloon, administrator, Memorial Hospital, Hollywood, president-elect; Ted L. Jacobsen, administrator, Morton F. Plant Hospital, Clearwater, past president.

utive director, Knickerbocker Hospital, New York, N. Y.

**Geoffrey Torney** – has been appointed administrator, Knox County General Hospital, Rockland, Md. Mr. Torney formerly had been administrator, Underwood Hospital, Woodbury, N. J.

**John A. Walsh** – has been appointed controller, Presbyterian-St. Luke's Hospital, Chicago. He formerly served as controller, Crane Co., Chicago.

**Charles E. Welch** – has been appointed administrator, Memorial Community Hospital, Edgerton, Wisc. He succeeds **Harold E. Springer.**

## VA Appointments

**Oscar Auerbach**–M.D., of the East Orange (N.J.) VA hospital and **Ludwik Gross,** M.D., of the Bronx (N.Y.) VA hospital have been appointed senior medical investigators for the VA. Both doctors will remain at their hospitals to carry on research.

**Charles P. Henke** – has been named manager, Oakland (Pa.) VA hospital. Dr. Henke was formerly with the VA Center, Wood, Wis. He succeeds **Horace D. Smith** who will head the consolidated VA hospitals in Maryland.

## New Officers

**Herald R. Cox** – has been elected president of the Society of American Bacteriologists. Dr. Cox is director of virus research at Lederle Laboratories Division, American Cyanamid Company. His fellow officers are **John E. Blair,** M.D., of the Hospital for Joint Diseases, New York City, vice-president; **E. M. Foster,** M.D., of the University of Wisconsin, secretary; and **J. H. Bailey,** M.D., Sterling-Winthrop Research Institute, treasurer.

**Elizabeth Vanden Bossche** – has been appointed executive secretary of the Florida Nurses Association. She recently served as executive director, Visiting Nurses Association of Harrisburg, Pa.

**Frederick Y. Wiselogle** – has been chosen president-elect, New York Academy of Sciences. Dr. Wiselogle is associate director in charge of chemical research, Squibb Institute for Medical Research, New Brunswick, N. J.

## Deaths

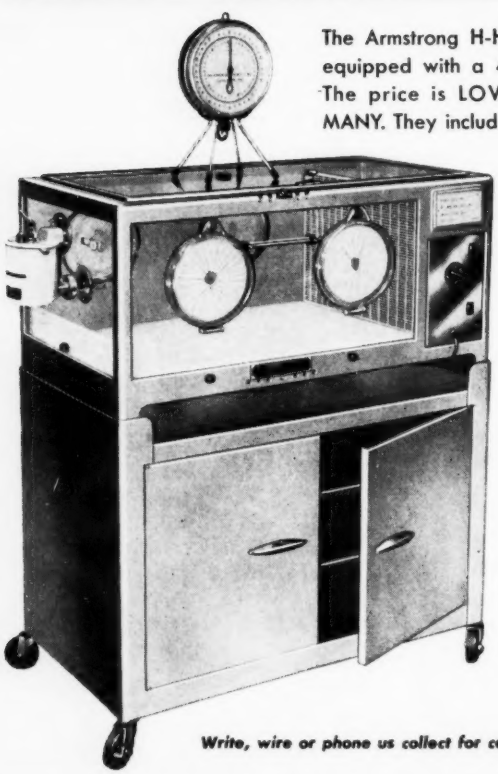
**Peter S. Berlind** – 61, executive director of Unity Hospital, Brooklyn, N. Y., died December 21, 1959. He had been with the hospital for 30 years.

**John Lewis Bremer** – 85, Hersey professor emeritus of anatomy at the Harvard Medical School, died December 26, 1959.

A noted embryologist, Dr. Bremer wrote a textbook on histol-


Armstrong H-H

Hand-hole type Baby Incubator



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ogy and many scientific articles. He was a fellow of the American Academy of Arts and Sciences and of the Royal Microscopical Society, and a member of the American Association of Anatomy.

**Henry M. Feinblatt** — 68, former director of medicine at Kings County Hospital Center, New York City, died December 24, 1959. Dr. Feinblatt, an endrocrinologist, had served as consultant for the hospital and was co-developer of a substance to stimulate the stomach muscles in getting rid of food.

**Margaret J. Heath** — chief medical record librarian, Buffalo General Hospital, N. Y., died November 24, 1959. Miss Heath was immediate past president of the American Association of Medical Record Librarians.

**Job Caldwell Patterson, M.D.** — 67, head of Patterson Hospital, Cuthbert, Ga., died November 8, 1959.

Dr. Patterson had served as president, Georgia Medical Association, and was a fellow in the American College of Surgeons and the International College of Surgeons.

**William A. Stadie, M.D.** — 73, developer of the first oxygen chamber for medical treatment used in the U. S., died Sept. 11. He had retired in 1956 as John Herr Musser professor emeritus of research medicine at the University of Pennsylvania.

**Russell M. Wilder** — 74, expert on nutrition and diabetes, died December 17, 1959.

Dr. Wilder was former director of the National Institute for Arthritis and Metabolic Diseases, and a former staff member of the Mayo Clinic. He was one of the first scientists to identify the disorder, chronic hypoglycemia.

**Gregory Zilboorg, M.D.** — 68, noted psychiatrist and lecturer, died Sept. 17. He was a leading practitioner of psychoanalysis and a student of the causes of suicide. He had been the author of four books and more than 100 papers dealing with suicide, postpartum psychosis, and the legal aspects of psychiatry.

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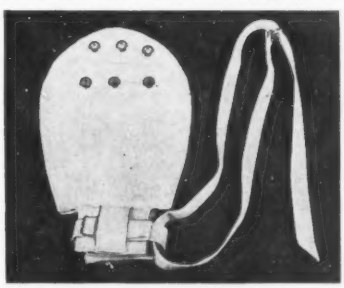

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# The Book Corner

**ASEPTIC TECHNIQUE FOR OPERATING ROOM PERSONNEL. *By Erline Webb Perkins, R.N., B.S., M.S. in N. Ed. Philadelphia: W. B. Saunders Company, 1959. 112 pages.***

This operating room manual of practical nursing is also useful in training operating room technicians or surgical aides, medical students functioning as technicians, and nurses of any basic program.

Written to fulfill the request of licensed practical nurses for additional training, the manual gives the basic principles for scrubbing and circulating in an operating room, and includes information on the basic sciences, sterilization, development and principles of aseptic technique, and preparation of the patient for surgery. Discussions are presented on responsibilities of operating room nurses, materials used in the operating room, and the basic considerations in all types of surgery.

Teaching aids for the instructor include a suggested activity list and a student evaluation record.

**MEDICAL RADIOGRAPHIC TECHNIC. *Prepared by Technical Service X-Ray Department, General Electric Company. Springfield, Ill.; Charles C. Thomas, 1959. Second edition. 386 pp. $11.00.***

Written by technicians for technicians, this publication aims to help x-ray operators improve value of radiographs, properly evaluate and employ various factors which affect end results, and obtain that combination of radiographic values which best reveals information essential for interpretation and diagnosis.

Information is presented on fundamental electrical concepts, electron theory and x-ray tube, x-ray apparatus, radiographic calibration, factors affecting radiograph quality, processing room, stereoscopy, body section radiography, foreign body localization, fluoroscopy, soft tissue and high voltage radiography, anatomy, positioning and technic, photography of fluorescent screen image, and special procedures.

Illustrations are liberally scattered throughout with over 200 self-explanatory photographs in basic x-ray generating circuits, positioning section.

**ADAPTION TO EXTRAUTERINE LIFE. *Report of the 31st Ross Conference on Pediatric Research, edited by Thomas K. Oliver, Jr. Ross Laboratories, Columbus, Ohio, 1959. 96 pages.***

This report summarizes discussions of 34 Canadian, British and United States investigators on circulatory, respiratory and biochemical adaptations in the newborn.

Of interest to clinicians as well as researchers, these round-table discussions consider clinical applications of recent investigations and their significance for future research.

Problems presented by pulmonary hyaline membrane, asphyxia at delivery, progeny of diabetic mothers, and placental transfusions are considered; recommendations for management are discussed.

**TEXTBOOK OF ANATOMY AND PHYSIOLOGY. *By Catherine Parker Anthony, B.A., M.S., R.N. Fifth Edition. St. Louis, Mo.: the C. V. Mosby Company, 1959. 574 pages. $5.35.***

This fifth edition of the Anthony text for student nurses includes new emphases as well as revised content. Explanation of facts and their relationships are placed above encyclopedic quantity.

The text includes new chapters on fluid and electrolyte balance and acid-base balance. Discussions of cell and muscle physiology, metabolism, reproduction, the hypothalamus, and the endocrines have been revised to incorporate current data.

The teaching aids characteristic of previous editions remain. Topical outlines precede each chapter; diagrams, pictures and chapter summaries are also used.

In keeping with its stated editorial policy, only the main facts


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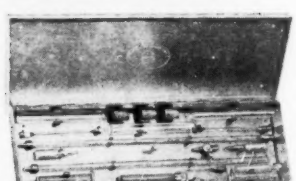

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of anatomy and physiology are discussed, with physiology given more emphasis than anatomy.

The text is divided into seven units:

1. The body as an Integrated Whole—including chapters on major concepts and component units of the body.

2. The erect and moving body—the skeletal and muscular systems.

3. Integration and Control of the Body—the nervous system.

4. Maintaining the Metabolism of the Body—including the circulatory, respiratory, digestive and urinary systems.

5. Reproduction of the Human Being.

6. Integration and Control of Body Functions by Hormones.

7. Fluid, Electrolyte, and Acid-Base Balance.

## Ulcer Therapy Should Mend Body, Spirit

Gastroenterology and psychiatry should be combined for effective management of ulcers, according to Walter C. Alvarez, M.D., speaking on the history of gastroenterology in a lecture sponsored by the International College of Surgeons.

Dr. Alvarez added that early in his career he studied diseases of the digestive tract, then found he had to study nerves, too, since the digestive system is so influenced by nervous tension.

Terming the ulcer one of the "caught-in-the-trap" diseases, he recommends that the physician, before prescribing, should make inquiries into the background in an effort to ascertain the emotional problem underlying the condition. He may be surprised to find the cause of the trouble is a drunken husband, a hated job, a feeble-minded child, or other emotional stresses. Removing or alleviating the stress may cure the ulcer.

## Strontium Danger Exaggerated

Animal studies conducted at Argonne National Laboratories indicate that fear of the effects of radioactive strontium is exaggerated, according to Dr. Miriam P. Finkel.

Mice fed dosages up to 50 times that taken normally into the body by humans have not been harmed as much as was first estimated. There has been no evidence of life shortening, leukemia, or bone cancer. Dr. Finkel estimates that it will be necessary to administer 5,000 times the human dosage in order to observe these effects.

Experiments heretofore have been with injections of strontium into the animals. Dr. Finkel adds that internal radiation resulting from a single injection is different from that resulting from a daily dose over a long period through diet. In her opinion it is improper to estimate damage to humans on the basis of injected strontium in animals, since humans do not receive strontium that way, but as a result of food contamination by fallout.

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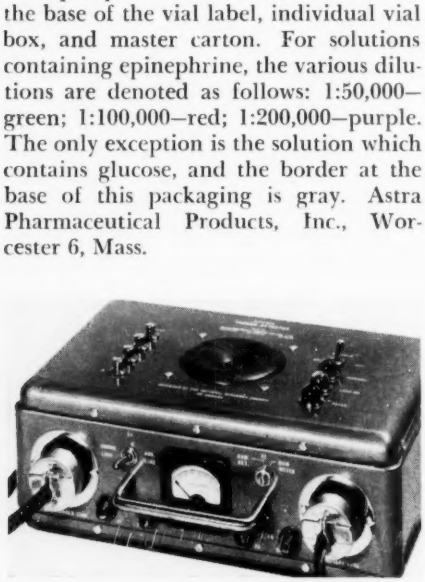
## 500. Color coding

Xylocaine Hydrochloride (Astra) is color coded for easy selection by the user as follows: 0.5%—white; 0.8%—pink; 1%—gray; 1.2%—blue; 2%—gold; 4%—orange; 5%—yellow. All solutions without epinephrine have a blue border at the base of the vial label, individual vial box, and master carton. For solutions containing epinephrine, the various dilutions are denoted as follows: 1:50,000—green; 1:100,000—red; 1:200,000—purple. The only exception is the solution which contains glucose, and the border at the base of this packaging is gray. Astra Pharmaceutical Products, Inc., Worcester 6, Mass.



## 501. Dynamic ground detector

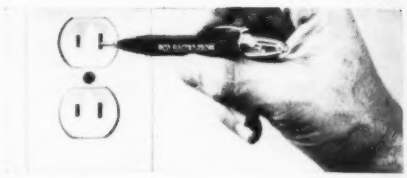
Model 1515, transistorized for maximum reliability, is designed to have sufficient sensitivity to be practical for use in hospital operating rooms, where explosive atmosphere is encountered, to indicate dangerous electrical connections instantly so they may be remedied before an accident occurs. The detector is equally sensitive to balanced or unbalanced grounds of any configuration of resistance or capacitive impedance likely to occur on AC 2-wire supply; will give warning of a ground fault of 60,000 ohms occurring on the line. This impedance may be either resistive or capacitive. Meltronics, Inc., 1010 N. Main St., Elkhart, Ind.

## 502. Cleaner

New lanolin-containing cleaner, Buckeye DYD, developed for institutional use, is recommended for bath tubs, refrigerators; stainless steel, chrome and brass fixtures. Antiseptic, it leaves surfaces clean, germ-free. Davies-Young Soap Co., Dayton 1, Ohio.

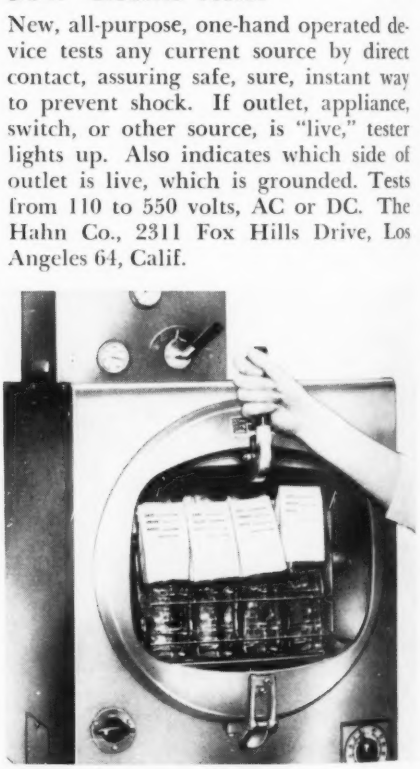
## 503. Pipet

New line of Pyrex microliter (lambda) pipets, designed for radiochemistry, electrophoresis and chromatography, as general microbiological and microchemical applications, features bold red capacity markings which are a permanent part of the glass. Capacities from one through 500 microliters. Corning Glass Works, Corning, N. Y.



## 504. Electric tester

New, all-purpose, one-hand operated device tests any current source by direct contact, assuring safe, sure, instant way to prevent shock. If outlet, appliance, switch, or other source, is "live," tester lights up. Also indicates which side of outlet is live, which is grounded. Tests from 110 to 550 volts, AC or DC. The Hahn Co., 2311 Fox Hills Drive, Los Angeles 64, Calif.



## 505. Formula sterilizer

New, low-cost infant formula sterilizer, with all operating and safety features of company's larger models, has capacity for service to eight bassinets. Processes 32 four- to eight-ounce bottles, with a forget-proof time and temperature cycling operation through simply set automatic controls. American Sterilizer Co., Erie, Pa.

## 506. Anesthesia apparatus

New model, "Texette," provides the features of the company's larger models, but in a more compact and lower price unit. Flowmeter is the sturdy ball type, giving greater accuracy and finer control. Pressure gauges for all gases are standard. "Copper Kettle" for vaporization of liquid anesthetic agents is an integral unit, particularly useful for such agents as Fluothane. The Foregger Co., Inc., Roslyn Heights, L.I., N.Y.

## 507. Gas partitioner

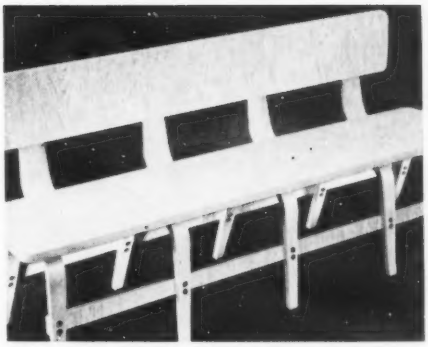
New clinical gas partitioner determines the carbon dioxide, oxygen and nitrogen in blood, serum, or respiratory gases in six minutes. Uses only 0.1 ml of blood or serum; results are reproducible; analysis is automatic; strip-chart recorder (not supplied) plots a chromatogram for each sample. Instrument, 18″ long, 13″ deep, and 7¾″ high, has Formica-laminated wood top and base that helps insulate it from local temperature changes. Operates from 115-volt 50-60 cycle AC. Fisher Scientific Co., 444 Fisher Building, Pittsburgh 19, Pa.

## 508. Insert bag

A throw-away insert bag of clear plastic is new addition to the line of accessories for the Waste Mobile clean-up cart. The six-bushel polyethylene bag is designed for use in hospitals where the nature of the waste material does not encourage clearing and re-using the bag. Walton-March, 1592 Deerfield Road, Highland Park, Ill.

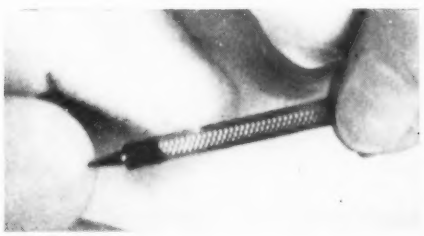
## 509. Syringe

New B-D Hypak glass sterile disposable syringe-needle combination minimizes medication loss. Control is achieved through the single, uniform bore allowed by permanently affixing the needle cannula to the glass hub. The 2 cc Hypak syringe is available with following needles: 25G 5/8″; 22G 1″, 1½″; and 20G 1″, 1½″. Units are sterile, non-toxic, pyrogen-free, graduated in minims and cc's. Becton, Dickinson & Co., Rutherford, N.J.



## 510. Outpatient bench

New outpatient and clinic bench features maintenance-free Nevamar plastic laminates on all wearing surfaces—seats, backs and stretchers; back supports and legs of electronically laminated curved veneers with self-leveling glides. Designed for heavy use, bench has 72″ seat adequate for four persons. Available in three durable wood finishes, and choice of three Nevamar patterns. National Hospital Furniture, Odenton, Md.



## 511. Stainless steel lancet

New sterile, disposable stainless steel lancet offers protection against infection in the taking of blood samples. Less than two inches long and .010 inches thick, the lancets are economical enough for one-time use. Propper Manufacturing Co., Long Island City, N. Y.

## 512. Electric icemaker

New, economical automatic electric flaked icemaker will produce approximately 250 to 350 lbs. of flaked ice per day, depending upon temperature of water and room. Unit freezes the water, conveys the ice flakes to a connecting insulated bin holding approximately 170 lbs., shuts itself off when the bin is full, then turns itself on again to replace flakes as they are used. Comes complete with storage bin, compressor and motor in a 3-foot unit, with stainless steel facings, work top and backsplash, and contoured front edge. The Bastian-Blessing Co., 4203 W. Peterson Ave., Chicago, Ill.

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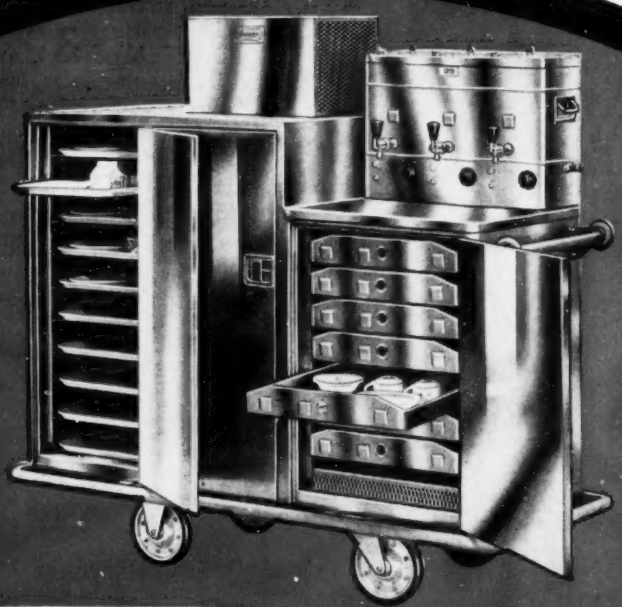

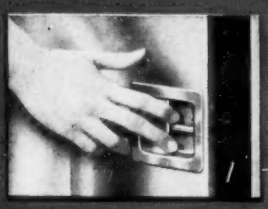

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It pleases patients with "little" things that mean so much: pre-heated coffee cups; choice of beverages and soups (hot or cold); crisp salads; cold desserts... to match piping hot meats and vegetables. NO COMPLAINTS ABOUT "INSTITUTIONAL" FOOD!

## EFFICIENCY FOR YOU

1. Unobstructed, counter-height set-up area with exclusive "step-down" feature. Takes trays up to 15½"x 20½".

2. Refrigerated tray compartments... cold items on trays ready to go. Slides easily removed to clean compartments. 3¾" between slides allows space for ½ PINT MILK CARTONS.

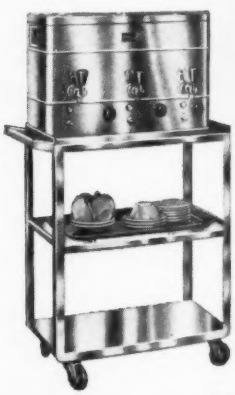
3. Heated drawers (185°)... each holds three 9" plates, three 5½" plates with hot foods ready for trays. Room for three cups, too. **Only method that guarantees hot coffee.**

4. Holdover refrigeration system maintains low temperature for two hours without current. **No blowers to dry out and wilt food!**

5. Available in 20- and 24-meal sizes.

6. All stainless steel, double-walled, fully insulated. Recessed doors on piano hinges with exclusive **"Easy Seal" Latches.**

7. REMOVABLE BEVERAGE BAR. Insulated wells for hot and cold drinks and soups. Use separately on utility truck for between-meal servings or in doctors' lounge (see below).



**Shampaine**
ELECTRIC CO.

615 E. First Avenue • Roselle, New Jersey

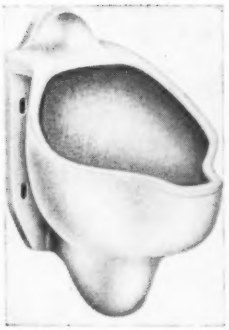
*A DIVISION OF SHAMPAINE INDUSTRIES, INC.*

## 513. Utility protector

New low-cost disposable Poly-Con Utility Protector is provided in perforated roll form for simple pull-out, tear-off use. For use in isolation ward, receiving room, emergency room; for bundling patients' clothes; as specimen or laundry bag, pillow or blanket protector. Noncombustible. Translucent white, size 21" x 30", 200 per roll in dispensing carton which may be carried in cart or hung on wall. Continental Industries, Inc., 18624 Detroit Ave., Cleveland 7, O.

## 514. Sterilwrap tubing

Paper tubing, made of sterilizable grades of two new papers is available with imbedded tear string for easy opening packages. Comes in widths from 1½" to 12", on 1,000-ft long rolls, to be cut to lengths required. In wet strength creped Sterilwrap, and tan two-way ribbed and creped Sterilwrap. These are in addition to the company's standard flat tan paper tubing. Samples on request. Busse Hospital Products, 64 East 8th St., New York 3, N. Y.

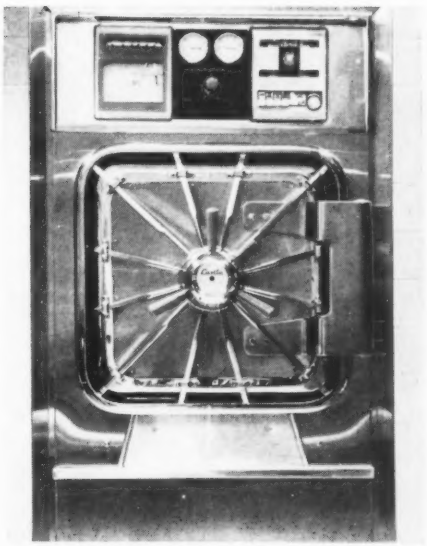


## 515. Urinal

New wall-hung urinal of unbreakable cast aluminum has new-type flushing which gives positive scour to walls while water action discharges contents. Height from floor is variable to permit maximum flexibility. Crack-proof, damage-proof, and tamper-proof. In white or pastel colors. Aluminum Plumbing Fixture Corp., 778 Burlway Road, Burlingame, Calif.

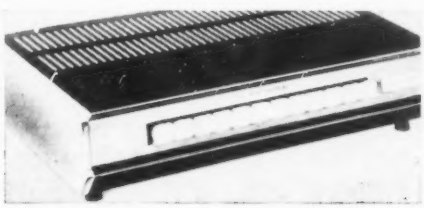
## 516. Cleaner

New Glo-Bol is proportion-controlled bowl cleaner, packed 40 gm of anhydrous granules per water-soluble packet. User does not touch ingredients, which do not become active until several seconds after the package is dropped into the toilet bowl. Piatt & Smillie Chemicals, Inc., 3419 Gratiot St., St. Louis 3, Mo.



## 517. Push-button sterilizer

New sterilizer features completely automatic, push-button control, and substantially reduces cycle time. Replaces conventional multiple dials, handles and switches with four easily identifiable keyboard controls marked: liquids, dry goods, manual, and steam off. Desired cycle can be started by simply pressing the proper key; subsequent phases follow automatically; buzzer indicates cycle completion. Indicating controls furnish a permanent record of temperature and pressure for each cycle. The Orthomatic can take all loads, and cycle temperature can be varied from 220° to 270°F by turning a calibrated dial. Available in cabinet or recessed mountings, with cylindrical, straightline, or rectangular bodies. Wilmot Castle Co., 1939 E. Henriette Road, Rochester, N. Y.



## 518. Intercom system

New all-transistor Chief, less than 3" high, is proportioned like a book and lies flat on the desk. New standard features include a monitoring signal which visually indicates to a non-private station that it is being monitored; incoming call chime; external relay control for use in extremely high noise level areas; and a reciprocal power supply for use where no electrical outlet is available. Talk-A-Phone Co., 1 N. LaSalle St., Chicago 2, Ill.

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# New ideas, new products for dietary service...

## through one service expert!

American representatives understand dietary service needs. They offer valuable experience and expert counsel in every hospital area . . . and the widest, most complete selection of products and services in the field. You can rely on American's reputation for quality and for prompt, dependable delivery. Your man from American is dedicated to your hospital's best interests . . . call him with confidence.

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of Longmeadow, Massachusetts.
American Representative
in our Boston Region.

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Export Division: Flushing 58, L. I., N. Y., U.S.A.

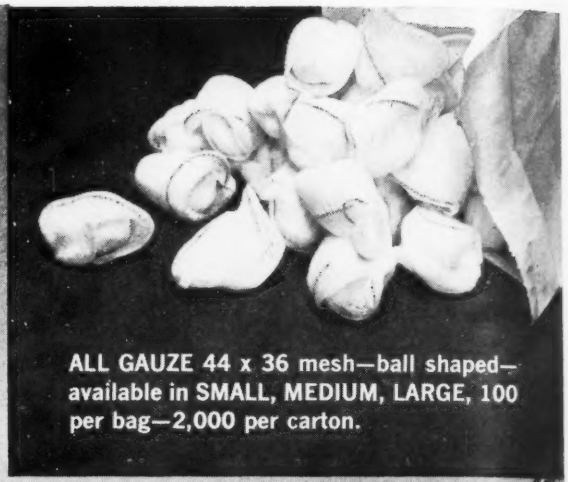
# Hospital Supply Corporation

Tomac

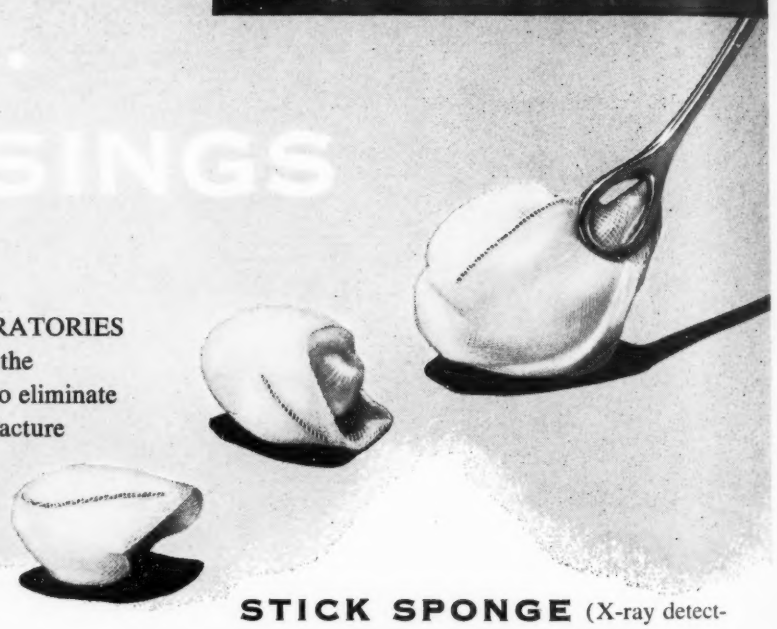
Dallas • Kansas City • Los Angeles • Minneapolis • New York • San Francisco • Washington

Offices in principal cities of Latin America

# MT. SINAI* special O.R. DRESSINGS



ALL GAUZE 44 x 36 mesh—ball shaped—available in SMALL, MEDIUM, LARGE, 100 per bag—2,000 per carton.



Created by MARCO LABORATORIES in collaboration with one of the country's leading hospitals*, to eliminate costly in-hospital hand manufacture of a group of O.R. dressings widely used in modern surgical practice.

Thorough clinical testing, uniformity of size and rigid quality control, have resulted in Mt. Sinai dressings being accepted as standard by hospitals everywhere, including Armed Service and Veterans installations.

For nearly a quarter century Marsales Company has worked directly with hospitals in the design, development and manufacture of all types of surgical dressings to set ever higher standards of performance and quality.

**STICK SPONGE** (X-ray detectible—not sterilized). For use with sponge stick or forceps in all types of surgery, and prepping or cleansing of wounds. Soft tab of sponge constructed so stick or forcep can be clamped tightly to prevent slipping—no bulk to damage hinge or box lock of forcep.

**CATALOG AND PRICE LIST ON REQUEST**
**WRITE TO DEPT. HT2**

**marsales co., inc.**
DIVISION OF HERMITAGE COTTON MILLS

marco

*"serving hospitals exclusively"*

62 WORTH STREET • NEW YORK 13, N. Y.

## 519. Needle holder

Three new Stille needle holders, made in Sweden, are now available here. They are the 7½" Potts, the 7" New Orleans, and the 8" Bjork models. Each of the holders features special serrations. One jaw has straight, single-cut serrations, the other is double cross-cut. This permits user to maintain a firm, non-slip grip on the tiniest needle. Ohio Chemical & Surgical Equipment Co., Madison 10, Wis.

## 520. All-plastic drum

New all-plastic injection molded 55-gal drums are made entirely of white polyethylene, have an inside diameter of 24" and stand 31" high. Tight-fitting, splash-proof lids fasten securely by means of a steel closure ring. Weigh only 10½ lbs.; noiseless, non-rusting, non-denting, non-toxic, non-sparking. Easily cleaned, sanitary, and long lasting. Resistant to all acids and chemicals. May be nested for storage. Redmanson Corporation, 630 Loucks Mill Road, York, Pa.

## 521. Vinyl spray

New, secret formula vinyl spray designed for use on such materials as nylon, rubber, rayon, cotton, canvas, leather, leatherette, plastic, wool, and almost any synthetic, is now available. Especially suitable for hospitals, since curtains and upholstery can be completely refurbished without disturbing the patients. Choice of 14 mix-or-match shades. The spray can be handled by anyone capable of using an ordinary commercial spray gun. Taussig Paint Sales Co., Old York Road & Township Line, Jenkintown, Pa.

## 522. Cup holderette

Paper cup holderettes that glow in the dark, for use in hospital x-ray rooms, are available. The plastic holderettes snap onto 14-oz cups; when cups are disposed of, holderettes are re-used. Recommended especially for the use of barium, which may be pre-mixed and stored in paper cups. When doses are needed, filled cups can be taken out of storage and the holderettes snapped on so that the barium can be located promptly in the dark. Dixie Cup Division of American Can Co., New York, N. Y.

## 523. Cryogenic container

New liquid $O_2$ or $N_2$ storage and transfer container is vacuum insulated, built of stainless steel, and features an extra large open neck to facilitate filling and pouring. An automatic self-pressurization system is provided for pressure transferring the liquid from the container for use in its intended application. Model shown, a five liter size, weighs 10 lbs. 4 oz., measures 10½" in diameter by 15½" in height. Similar models are available in 10 and 25 liter sizes. Aro Equipment Co., Bryan, O.

## 524. Plastic oxygen mask

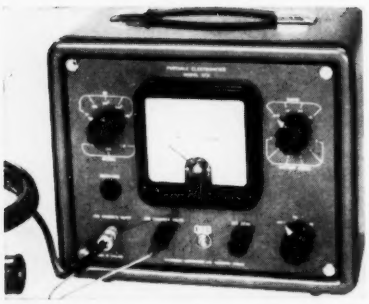
New expendable plastic oxygen mask, designed for maximum patient comfort, is made of special non-toxic green vinyl that gently conforms to the face, can be trimmed to conform to unusual facial features. Used with standard oxygen connecting tubes, or large-bore tubing; comes with breathing bags for high concentration of oxygen. National Cylinder Gas Division of Chemetron Corp., Chicago, Ill.

## 525. Aquamatic pad

New unit provides controlled therapeutic heat or cooling to any part of the body – automatically and with minimum attention. Consists of a flexible, vinyl pad with sealed tubing, and a control unit that circulates heated and cooled water at selected temperature without varying more than one degree. Easily cleaned or cold-sterilized. Molds to all body contours; available in three sizes for all types of application. American Hospital Supply Corp., 2020 Ridge Ave., Evanston, Ill.

## 526. Ultrasonic cleaner

Designed expressly for dentists and dental laboratories, new unit quickly and thoroughly cleans all tools and materials used in dental practice without disassembly; cleans buffing compounds from inlays and crowns; loosens plaster, investment matter, and temporary cement. Tank capacity is 1⅛ gal – sufficient to permit cleaning of instruments and tools up to 10½" in length – yet it occupies only 10" x 11" of bench space. Mettler Electronics, Pasadena, Calif.



## 527. Portable electrometer

New x-ray dose meter is battery operated, weighs 15 lbs. Can be used for the measurement of dose rates for 0.001 mr/sec to 15 r, or for the measurement of doses from 0.01 mr to 150 r, and can also be adapted to measure very small currents down to 10-13 amperes. Range of five capacitive inputs for measuring doses, and three resistive inputs for measuring dose rates. The desired selection is made by the switch on front of instrument. Shiro Scientific Instruments, 275 Fourth Ave., New York 10, N. Y.

## 528. Chromatograph

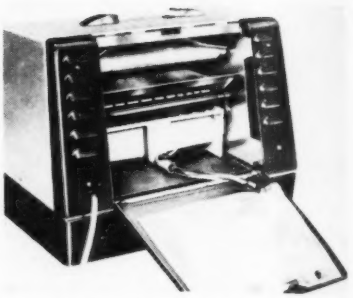
New, explosion-proof version of company's chromatograph, this latest hi-speed model utilizes an air-driven motor to prevent instrument ignition, and to allow the use of all types of solvent systems. Recommended for fast and routine paper chromatography separations of amino acids and sugars, as well as for testing for heavy metal poisoning in blood. Precision Scientific Co., 3737 W. Cortland St., Chicago 47, Ill.

## 539. Colostomy irrigator

Marsan transparent irrigator and irrigating technic is simple, quick, sanitary method for clearing the colostomy. Designed to permit the patient to sit on the toilet while irrigating, with bowel matter flushed as necessary, in the same manner as any normal person. Its use eliminates odors, necessary preparations such as spreading paper over the bathroom floor, kneeling in front of the toilet bowl, or kneeling to use tub or pan, as well as unpleasant cleanup task. Set consists of plastic irrigator, adjustable elastic belt, 40-in. long, 1-in. wide; colon tube; 100 transparent single-service irrigator tubes, 11½-in. long; 2-oz rubber bands, and 6 stoppers. Colostomy Appliance Laboratory, 5054 S. Lawndale Ave., Chicago 32, Ill.

## 530. Nurse's gown

New all-purpose OR and utility gown has generous back overlap of full sweep skirt held in place by wraparound belt. Exclusive free-action sleeve covers completely, yet provides freedom and comfort. Invisible double-ply neck yoke for trim tailoring; two roomy front pockets. Colored materials are vat-dyed and guaranteed color fast. American Hospital Supply Co., 2020 Ridge Ave., Evanston, Ill.



## 531. Portable photocopier

New Ampto "Nine" unit is designed for all-purpose operation, will handle papers and films up to 9-in. wide, any length. Can be used for straight diffusion transfer (peel-apart) exposures and processing, and with the new Plenacopy process whereby unlimited numbers of copies can be made from a single negative. No mixing of liquids; built-in compartments for 100 each of negative and positive papers or film; especially suitable for use with transfer papers, such as Ampto Lumolite, when used under fluorescent lighting or diffused daylight. Anken Film & Chemical Corp., Newton, N. J.

## 532. Ice cream dishes

Unbreakable plastic ice cream dishes for sundaes and sodas are extremely heat-resistant, can be completely sterilized. Transparent and molded in traditional flare shape, sundae dish has 8-oz capacity; soda glass, 12-oz capacity. Trump Plastics, Inc., Cuyahoga Falls, O.

**CORRECTION.** In the December Buyer's Guide, page 119, **Amperex Geiger tubes** were incorrectly credited to Anken Film & Chemical Corp. They are manufactured by **Amperex Electronic Corp., 230 Duffy Ave., Hicksville, L. I., N. Y.**

## FILMS, NEW LITERATURE

### 552. Tissue processing

New 25-min. documentary, produced and acted by experienced pathologists, shows technics that have proved most effective in routine tissue work, used to diagnose malignancies. Film traces the cycle from initial gross dissection to final filing away of finished slides, and pathologist's dictation of data on tape recorder. Audio-visual Department, Fisher Scientific Co., 711 Forbes Ave., Pittsburgh, Pa.

### 553. Dieting patients

New booklet, *So You're Going on a Diet,* is available to physicians to be given to patients facing problems of weight control. Brochure has a weight chart for men and women and sample meals for a 1500-calorie diet. It discusses facts about calories and "will power," and warns of the dangers of easy reducing plans and products. Professional Services, Abbott Laboratories, North Chicago, Ill.

### 554. Hospital hardware

New A.I.A. folder contains all the Stanley hinges, roller door holders and latches designed to meet the exacting requirements of modern hospitals. Featured are full-jeweled, swing-clear ball-bearing hinges designed to swing doors completely clear of the opening when opened to 90 degrees. Stanley Hardware, Dept. PD, 195 Lake St., New Britain, Conn.

### 555. Epilepsy

New booklet, *Epilepsy — Its Causes, Effects and Treatment,* was written for the Federal Association of Epilepsy by Dr. Virginia A. Duggins of the department of neurology and neurological surgery, George Washington University School of Medicine. She divides cerebral dysrythmia into two major classifications for discussion: symptomatic, for which a definite cause can be found; and idiopathic, for which there is no known cause. Also discussed is the effectiveness of surgery. Federal Association for Epilepsy, 1729 F St., N. W., Washington, D. C.

### 556. Chemical catalog

New catalog is a comprehensive, up-to-date listing of all common inorganic and Eastman organic chemicals, as well as a complete inventory of culture media, stains, indicators, diagnostic reagents and volumetric solutions. Fully cross-referenced, it includes latest prices and packing information. Will Corporation, Box 1050, Rochester 3, N. Y.


## NEW RECOVERY ROOM STRETCHER

**CAT. NO. RS-100**

**COMPARE IN YOUR OWN HOSPITAL**

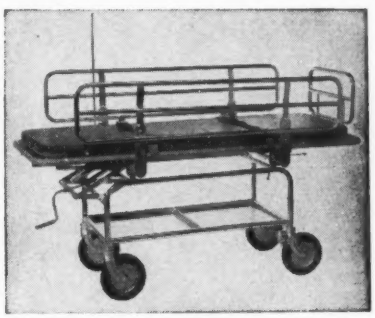
SPECIFICATIONS: (optional)
Length 76½"
Width 29½"
Height 34"

MATTRESS:
25" x 75" x 3"
Foam Rubber.
Cover—(Harco #4626) Conductive.

SAFETY STRAP:
2" Cotton and Rayon

SIDE RAILS:
Pratt all position retractable.
Automatic lock any position.
Rails completely out of the way when down.

5 to 6 inches more space available for the patient when using these rails with the conventional size mattress.



HEAD SECTION:
Hydraulically operated.

HEAD RAIL: Removable.

CASTERS:
2-lock, 2-swivel—10 inch x 2¼ inch.
Conductive. Balloon-tires.

ADJUSTABLE HEAD REST.

IV HANGER: Adjustable.
Can be placed in 8 positions around table.

SHOULDER REST. ARM BOARD. LOWER TRAY FOR BLANKETS AND ACCESSORY STORAGE.

FRAME:
1¼" 16 gauge steel tube helio-arc welded. Entire frame Chrome plated. Top stretcher frame reinforced with 1¼" 16 gauge steel tube.

STRETCHER BOTTOM AND LOWER STORAGE SHELF:
20 gauge stainless steel.

The design, construction and finish of this stretcher, makes it the sturdiest, best appearing and most practical all around recovery room unit available. It will pay you to write for our special introductory offer for trial and inspection in your own hospital.

**30-DAY FREE TRIAL**
**(Freight Prepaid)**

**PRATT HOSPITAL EQUIPMENT MFG. CO.**

**3007 SOUTHWEST DRIVE**
**LOS ANGELES 43, CALIF.**

*stops surgical bleeding promptly!*

# OXYCEL

Absorbable Hemostatic

OXYCEL (oxidized cellulose, Parke-Davis) produces prompt hemostasis in capillary and other small-vessel bleeding not controllable by conventional surgical methods. Applied directly from container, OXYCEL readily conforms to all wound surfaces ... shortens operative procedures and helps to prevent postoperative hemorrhage.

*practical forms for every surgical need*

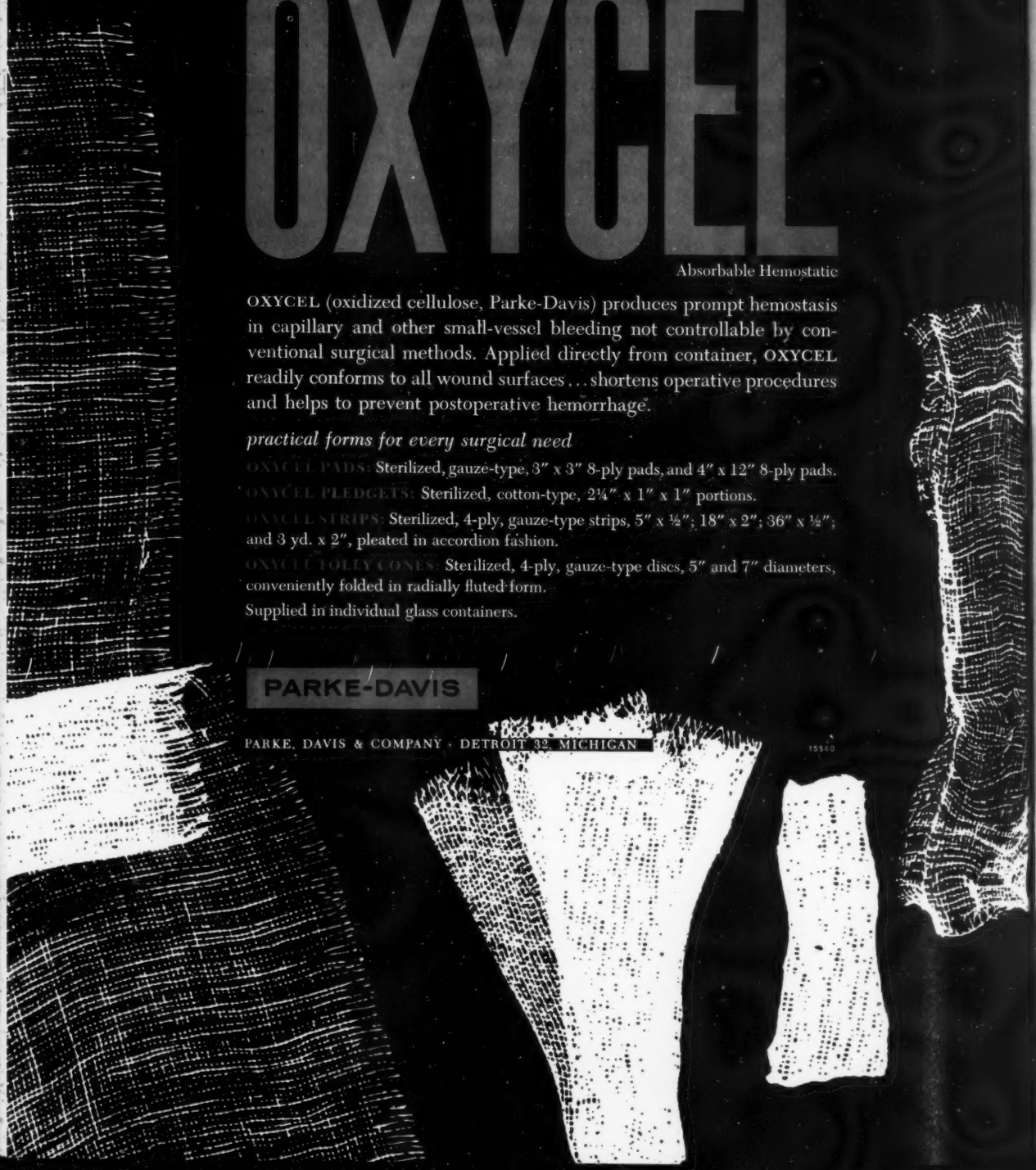
OXYCEL PADS: Sterilized, gauze-type, 3″ x 3″ 8-ply pads, and 4″ x 12″ 8-ply pads.

OXYCEL PLEDGETS: Sterilized, cotton-type, 2¼″ x 1″ x 1″ portions.

OXYCEL STRIPS: Sterilized, 4-ply, gauze-type strips, 5″ x ½″; 18″ x 2″; 36″ x ½″; and 3 yd. x 2″, pleated in accordion fashion.

OXYCEL TOLLY CONES: Sterilized, 4-ply, gauze-type discs, 5″ and 7″ diameters, conveniently folded in radially fluted form.

Supplied in individual glass containers.



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15560

# TRADE TOPICS . . .

## Mead Johnson Acquires Interest in French Lab

Mead Johnson & Company, Evansville, Ind., has purchased an interest in Laboratoires Allard, S.A., with offices in Paris, France. The Allard firm is one of France's leading manufacturers of ethical pharmaceuticals.

## Vitamix, Lustgarten Announce New Quarters

Vitamix Corporation and Lustgarten Laboratories, Inc., Philadelphia, have announced the opening of a new plant at Lancaster Avenue at 51st Street.

Ointments and oral medications such as Lustgarten capsules, tablets, and "Timcaps," will be marketed from the new location. Parenterals – Vitamix ampuls and vials – will continue to be manufactured at the original plant at Stiles Street.

## Draeger Opens Office In New York City

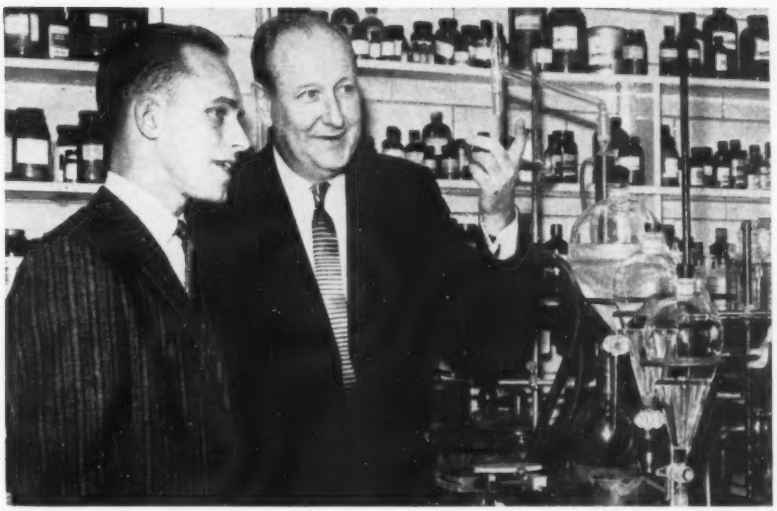
Draeger Oxygen Apparatus Corp. has opened offices in New York City at 432 Park Avenue, South. The company is an American branch of the German firm Draegerwerk Luebeck, which produces anesthesia, respiratory, and oxygen therapy equipment. The new office is under the direction of Jacques H. Vandevelde.

## Appleton Announces New Regional Managers

Appleton Electric Company, Chicago, has announced an extensive reorganization of its sales functions, resulting in the appointment of six new regional managers.

E. A. McNeill has been assigned the northeastern sales region, with headquarters in New York City. Z. B. Greer, Birmingham, Ala., will cover the southeastern region. W. G. Crum, Detroit, was assigned the east central region, covering Michigan, Ohio, Indiana, Pennsylvania, Kentucky, and part of West Virginia.

The north central region, including Illinois, Wisconsin, Minnesota, North and South Dakota, and parts of Iowa and Indiana will be covered by E. A. Hakanson, with headquarters in Chicago. H. T. White, Kansas City, will cover the south central area. H. A. Buegel, San Francisco, will cover the western district.



**William B. Graham, president of Baxter Laboratories, Inc., Morton Grove, Ill., explains a research project to Robert Burns Callaghan, first recipient of the annual Baxter Junior Achievement scholarship to Northwestern University. Mr. Callaghan received the scholarship as an outstanding member of the North Shore Communities Business Center of Junior Achievement. He is presently studying at the Technological Institute of Northwestern.**

## Steriphane Forms New Company

Steriphane Corporation of America, a new firm, has been formed to further develop the Steriphane sterilization technic. The new company's address is 98 Fifth Avenue, New York City.

## Graver Names New General Manager

Marvin Lane has been named general manager of Graver Water Conditioning Co., division of Union Tank Car Company. He was formerly technical director. In his new post he succeeds H. T. Sulcer, who resigned.

The Graver firm designs and develops new products and systems for industrial and municipal water and waste treatment.

## Aloe Firm to Distribute Velcro to Hospitals

A. S. Aloe Company, St. Louis, Mo., has been appointed exclusive distributor of the Velcro fastener to hospital and medical fields. The appointment was announced by Velcro Sales Corporation, New York City.

## NEWS BRIEFS

**Schering Corporation** – has opened a new quality control center. The two-story building, costing $1.2 million, brings under one roof scientific functions needed to test purity and quality of the firm's products. The building presently houses 63 scientists and technicians, as well as administrative offices, but can be expanded to accommodate a staff of 90.

* * *

**Emanuel Grunberg, M.D.** – has been appointed head of the department of chemotherapy of Hoffmann-La Roche Inc. Dr. Grunberg has been associated with the firm since 1946 and has been associate director of chemotherapy since 1957.

*(Continued on next page)*

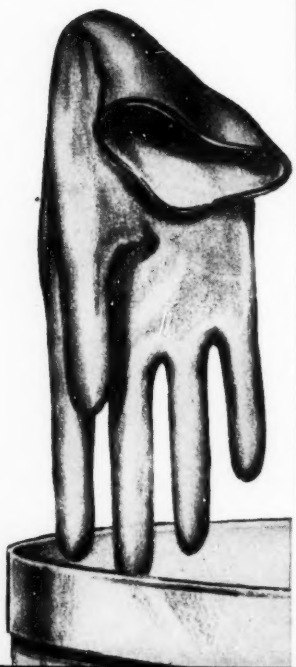
**John G. Bill**—55, president, Merck Sharp & Dohme, division of Merck & Co., Inc., died December 27.

He began his association with the firm in 1925, when he was appointed New England sales representative by Sharp & Dohme. Later transferred to the home office in Philadelphia, he held various positions, including general sales director and vice-president in charge of sales. He became president in 1955.

**F. Joseph Scharon**—has been appointed assistant sales manager in charge of sales promotion by the Cleveland Range Co. He was formerly sales manager of the institutional division of International Molded Plastics, Inc. The Cleveland firm manufactures steam cooking equipment.


yes, they're actually
DISPOSABLE

new Perry
disposable
(PATENT PEND.)
SURGEONS' LATEX GLOVES



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W. A. BUSHMAN
ASSOCIATES, Inc.
1841 Broadway
NEW YORK 23, N. Y.
BIO-SORB DUSTING POWDER IS A T.M. OF ETHICON, INC.
For Samples and Further Information WRITE DEPT. HT-1159

Perry RUBBER COMPANY
MASSILLON, OHIO
c 1958


**J. B. Roerig & Co.**—has announced the appointment of **Anton G. Kettel** as operations manager and **John L. Watters, M.D.**, as medical director.

* * *

**Raymond D. McMurray** — has been elected secretary, Hoffmann-La-Roche, Inc., succeeding **Hans H. A. Meyn,** who held the position for 40 years. Mr. McMurray was formerly general counsel for the firm.

* * *

**Trevor C. Page** — has been appointed controller, Don Baxter, Inc., Glendale, Calif. He has been with the firm since 1951, and for the past year has served as accounting manager.

* * *

**Jack N. Widick** — has been named vice-president, scientific products division, American Hospital Supply Corp., Evanston, Ill. He was formerly manager of sales and merchandising for the division, which specializes in sales of scientific apparatus and supplies to clinical and industrial laboratories.

* * *

**Thomas R. Lester** — has been promoted to the position of southeastern regional manager by Clay-Adams, Inc. He was formerly a representative in the same area.

* * *

**Harold N. Torkelson** — has been appointed general sales manager, Schering Corp., Bloomfield, N. J. He was formerly domestic sales manager.

* * *

**National Cylinder Gas Div.**—of Chemetron Corp. will market the new "Medco" line of hospital equipment of Mays Equipment Development Corp., Philadelphia.

**James W. Bradley**—has been named president, Smith-Dorsey Pharmaceuticals, Lincoln, Neb. Prior to his appointment, Mr. Bradley was director of sales and promotion, J. B. Roerig & Co.

* * *

**John E. Curry**—is the new representative for Clay - Adams, Inc., covering West Virginia, Virginia, and North Carolina.

* * *

**Dr. Peter B. Russell** — has been appointed director of research, Wyeth Laboratories, Philadelphia. He will be responsible for the administration of the firm's entire research program.

Dr. Russell has been with the Wyeth firm for several years, first as acting director of research at the plant in Havant, England, and manager of the organic development laboratory section in Radnor, Pa.

* * *

**Norman W. Achen**—has been promoted to general sales manager, Don Baxter, Inc., Glendale, Calif. He was formerly sales manager.

* * *

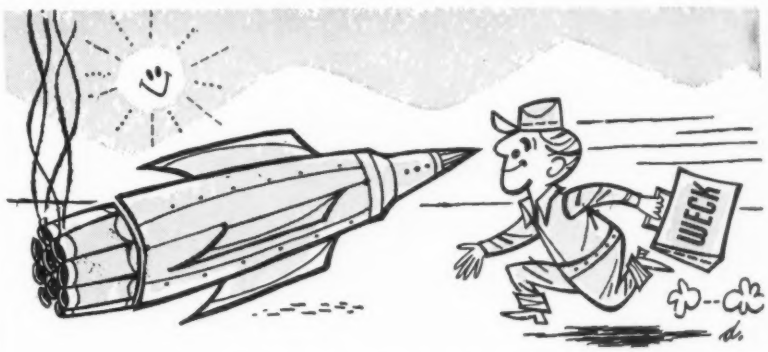
**Joseph Seifter, M.D.**—has been appointed director, basic medical sciences research, Wyeth Laboratories. He was formerly director of research.

* * *

**Alan Bird** — has been appointed to the newly created position of sales development manager, R. S. Landauer, Jr. & Co., Matteson, Ill. He will study sales potential of radiation safety devices throughout the U. S. The Landauer firm services medical and industrial facilities with cumulative beta, gamma, neutron and x-ray radiation film badge reports.

**Ray Kendall** — has been appointed district sales manager, Food service division, Market Forge Company, in the Californian, Nevada, Arizona and Hawaii area, with headquarters in Arcadia, Calif.

**A. C. Dalton** — has been named manager of sales services, Baxter Laboratories, Inc., Morton Grove, Ill. Since joining Baxter in 1949, Mr. Dalton has served in several capacities, including market analyst of the firm's Cleveland, Miss. plant.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Don't panic—the WECK REPAIR SERVICE will fix it promptly. Weck repairs your electric surgical and diagnostic instruments and their accessories and makes them work like new.

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- Headlights
- Otoscopes
- Bone saws
- Cast cutters
- Rheostats
- Procto and Sigmoidoscopes
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- Patient or indifferent plates
- Bovie Unit cords and handles
- Light carriers
- Electric conducting cords of all kinds
- Electrodes of all kinds
- Resectoscope loops
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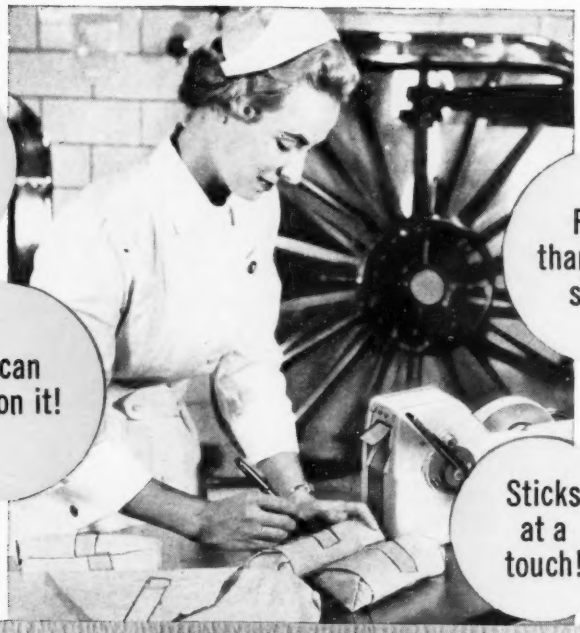
*Manufacturers of Fine Surgical Instruments and Hospital Specialties · Instrument Repairing*



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506. Anesthesia apparatus
507. Gas partitioner
508. Insert bag
509. Syringe
510. Outpatient bench
511. Stainless steel lancet
512. Electric icemaker
513. Utility protector
514. Sterilwrap tubing
515. Urinal
516. Cleaner
517. Push-button sterilizer
518. Intercom system
519. Needle holder
520. All-plastic drum
521. Vinyl spray
522. Cup holderette
523. Cryogenic container
524. Plastic oxygen mask
525. Aquamatic pad
526. Ultrasonic cleanser
527. Portable electrometer
528. Hi-speed chromatograph
529. Colostomy irrigator
530. Nurse's gown
531. Portable photocopier
532. Ice cream dishes

## FILMS, NEW LITERATURE

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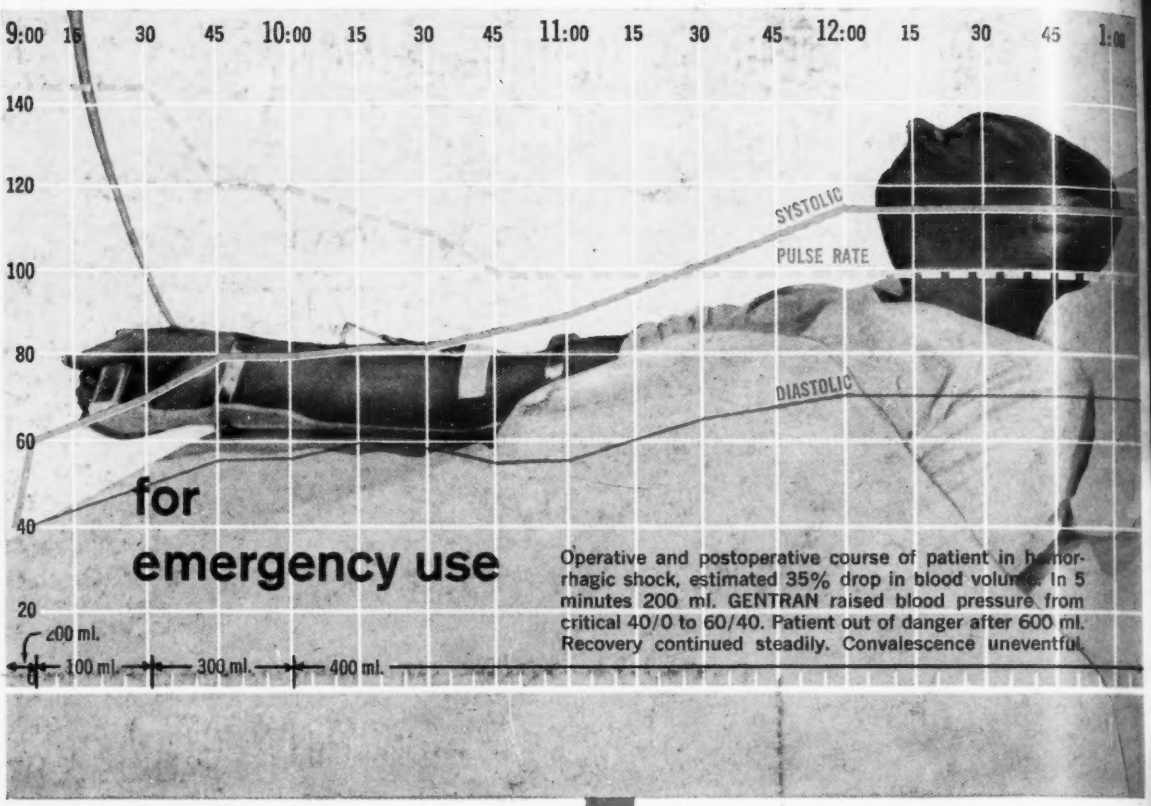


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